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Mario Pichardo

A
REVIEW
OF
THE PRIMATES

BY

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MONOGRAPH SERIES
VOLUME II

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ANTHROPOIDEA
Aotus to Lasiopyga

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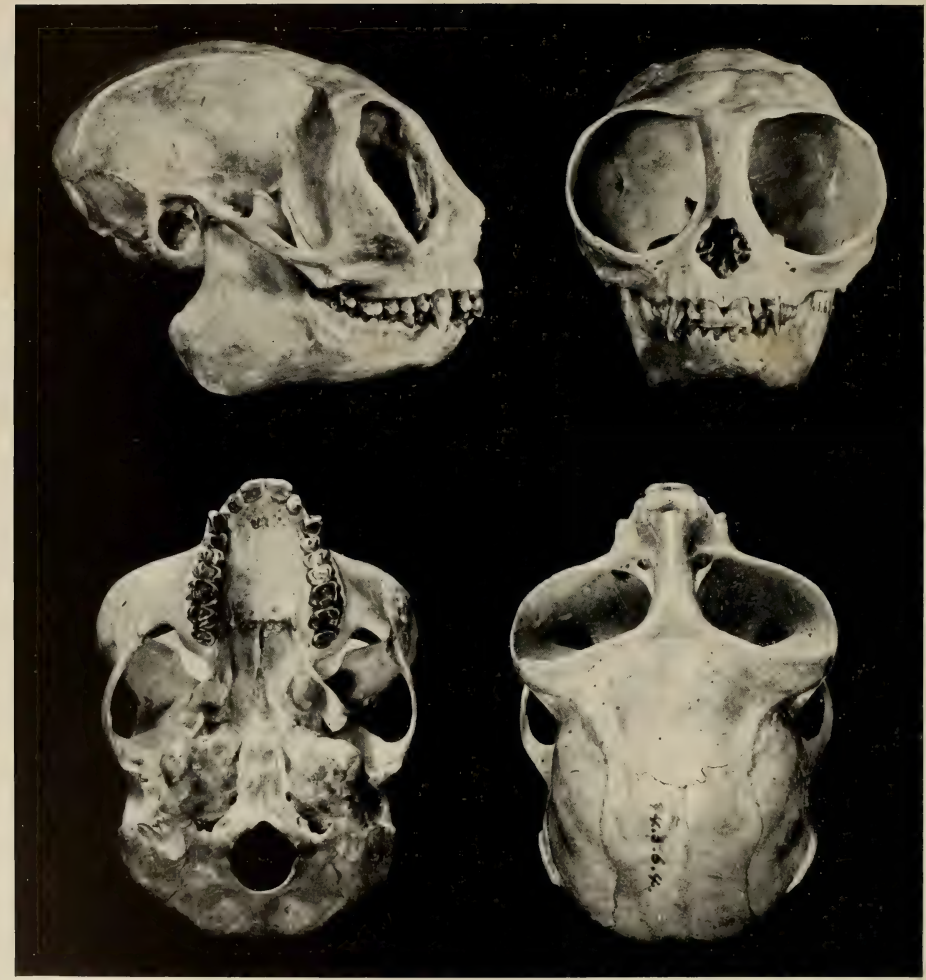
A REVIEW
OF THE PRIMATES



AOTUS MIRIQUOUINA.

No. 94.3.6.4. Brit. Mus. Coll. Nat. Size.

CLASS MAMMALIA.

ORDER ANTHROPOIDEA.

FAMILY CEBIDÆ.

Subfamily Aotinæ.

GENUS AOTUS. THE DOUROUCOULIS.

$$\text{I. } \frac{2-2}{2-2};\quad \text{C. } \frac{1-1}{1-1};\quad \text{P. } \frac{3-3}{3-3};\quad \text{M. } \frac{3-3}{3-3} = 36.$$

AOTES Humboldt, Rec. Obs. Zool. et Anat. Comp., 1811, (1815), pp. 306-311, 358, (for Aotus), pl. XXVIII. Type *Simia trivirgata* Humboldt.
Nyctipithecus Spix, Simiar. et Vespert. Bras., 1823, p. 25.
Nocthora F. Cuv., Hist. Nat. Mamm., V, 1824, livr. XLIII, pl.

Head round; body short, thick; face encircled by a ruff; ears short, mostly hidden in the fur; nostrils separated by a broad septum; eyes very large; tail bushy, the length moderate. Skull: orbits large, approximate, supported by a bony wall; upper incisors broad, subequal; canines long; lower incisors projecting forward; first upper premolar very long; last upper molar tricuspidate; hands and feet small; the semi-opposable thumb and great toe weak. Dorsal and lumbar vertebræ, twenty-two.

The Douroucoulis, as the species of AOTUS are generally called, are small animals with round heads and large eyes, and a short face surrounded by a ruff of lengthened hairs. The coat is rather soft and fluffy in texture, the tail of medium length, inclined to be bushy, and non-prehensile. These animals are nocturnal and arboreal; seldom seen during the day, hiding themselves amid the thick foliage, or in holes of the trees, but at night are very active and noisy, uttering loud 'caterwaulings,' and roaming about in search of food which consists of insects, fruit, and small birds when they are fortunate enough to seize one. The Indians call them 'Devil Monkeys,' and being naturally of a delicate constitution, they do not live long in captivity.

LITERATURE OF THE SPECIES.

1812. *E. Geoffroy St. Hilaire, in Annales du Muséum d'Histoire Naturelle, Paris.*
Aotus miriquouina first described as *Pithecia miriquouina.*

1811? *Humboldt, Recueil d'Observations de Zoologie et d'Anatomie*
(1815). *Comparée.*
Aotus miriquouina redescribed as *Simia* (*Pithecia*) *azaræ;* and A. trivirgatus, first described as *Simia trivirgata.*

1820. *Kuhl, Beiträge zur Zoologie.*
A. trivirgatus is given in its proper genus; A. miriquouina is given as *Pithecia miriquouina;* and A. infulatus is first described as *Callithrix infulatus.*

1823. *Spix, Simiarum Vespertilionum Brasiliensium, Species Novæ.*
A. infulatus redescribed as *Nyctipithecus felinus;* and A. vociferans first described as *N. vociferans.*

1829. *Fischer, Synopsis Mammalium.*
Three species of Aotus are here given under the genus Cebus. A. trivirgatus; *A. felinus* = A. infulatus; and A. miriquouina.

1829. *Vigors and Horsfield, in Zoological Journal.*
A species of Aotus is here described, but, except as to the genus, is undeterminable.

1840. *R. P. Lesson, Species des Mammifères Bimanes et Quadrumanes.*
The genus *Nyctipithecus* is here employed for the species of Aotus, one species and two varieties being recognized. They are (*N.*) trivirgata; and var. (*N.*) vociferans; and var. *Le miriquouina* = A. miriquouina.

1840. *Wagner, Schreber, Die Säugthiere in Abbildungen nach der Natur mit Beschreibungen. Supplementband.*
One species is given in this work, A. trivirgatus in the genus *Nyctipithecus;* but A. *felinus,* = A. infulatus, and A. vociferans are considered synonymous.

1843. *I. Geoffroy St. Hilaire, in Comptes Rendus.*
A. vociferans redescribed as *Nyctipithecus lemurinus.*

1848. *I. Geoffroy St. Hilaire, in Comptes Rendus.*
A. oseryi first described as *Nyctipithecus oseryi.*

1851. *I. Geoffroy St. Hilaire, Catalogue des Primates.*
Three species are here given under *Nyctipithecus: N. felinus* = A. infulatus; N. oseryi; and *N. lemurinus* = A. vociferans.

1855. *Wagner, Schreber, Die Säugthiere in Abbildungen nach der Natur mit Beschreibungen, Supplementband.*
Five species are included in *Nyctipithecus:* (*N.*) *felinus* = A. INFULATUS; (*N.*) INFULATUS; (*N.*) TRIVIRGATUS; (*N.*) OSERYI; and (*N.*) VOCIFERANS.

1857. *Pucheran, in Revue et Magasin de Zoologie.*
AOTUS SPIXI first described as *Nyctipithecus spixi.*

1862. *Reichenbach, Die Vollständigste Naturgeschichte der Affen.*
The species of AOTUS is, in this work, placed in *Nyctipithecus* as follows: (*N.*) TRIVIRGATA; (*N.*) *felinus* = A. INFULATUS; (*N.*) OSERYI; (*N.*) *lemurinus* = A. VOCIFERANS; (*N.*) SPIXI; (*N.*) VOCIFERANS.

1870. *J. E. Gray, Catalogue of Monkeys, Lemurs and Fruit-eating Bats, in the Collection of the British Museum.*
Four species are included in the genus *Nyctipithecus:* (*N.*) MIRIQUOUINA; (*N.*) TRIVIRGATUS; (*N.*) COMMERSONI = A. INFULATUS; and (*N.*) *lemurinus* = A. VOCIFERANS.

1872. *Sclater, in Proceedings of the Zoological Society of London.*
AOTUS RUFIPES first described as *Nyctipithecus rufipes.*

1876. *Schlegel, Muséum d'Histoire Naturelle des Pays-Bas, Simiæ.*
Three species are given in this work under the genus *Nyctipithecus* as distinct: (*N.*) AZARÆ; (*N.*) TRIVIRGATUS; and (*N.*) VOCIFERANS. A. RUFIPES (Sclat.), and A. OSERYI (Geoff.), are considered synonyms of A. VOCIFERANS.

1907. *D. G. Elliot, in Annals and Magazine of Natural History.*
AOTUS BOLIVIENSIS is first described.

1909. *G. Dollman, in Annals and Magazine of Natural History.*
In this paper six species of AOTUS are described for the first time, viz.: A. ROBERTI; A. NIGRICEPS; A. SENEX; A. GULARIS; A. LANIUS and A. MICRODON.

1912. *D. G. Elliot, in Bulletin of the American Museum of Natural History, New York.*
AOTUS GRISEIMEMBRA first described.

GEOGRAPHICAL DISTRIBUTION OF THE SPECIES.

With one exception, A. RUFIPES from Nicaragua, Central America, whose habitat is somewhat doubtful, the species of this genus are found only in South America, and are distributed across the continent from the Atlantic to the Pacific Ocean. Of the known species A. TRIVIRGATUS seems to have the widest distribution, and is found from Guiana in the East, to the Upper Amazon on the banks of the Cassiquiare River near the headwaters of the Rio Negro, Brazil, and westward to Ėga, in Peru. A. ROBERTI has only been obtained in the Sierra de Chapada, Matto Grosso, Brazil; and A. INFULATUS at Para. The only other locality in the eastern part of the continent inhabited by a member of this genus, is the right bank of the River Paraguay, northeastern part of Argentina, where A. MIRIQUOUINA is found. A. VOCIFERANS has been procured on the Ucayali and Huallaga rivers, and at Tabatinga, Upper Marañon, on the eastern border of Peru, and also in the Tolima Mountains, south western Colombia. In the mountains just named A. LANIUS was obtained. A. GRISEIMEMBRA has been found in Santa Marta, and on the Rio Sinu Ceretė, Bolivar, northern Colombia.

Two species inhabit Ecuador, A. GULARIS at the mouth of the Rio Coca, Upper Rio Napo, and A. MICRODON at Micas. Peru, besides A. TRIVIRGATA, has two other representatives of the genus, A. NIGRICEPS from Chanchamayo, and A. SENEX from Pozuzo, but the extent of their range is not yet known, and this may be also said of most of the other species. From the Province of Sara, Central Bolivia, A. BOLIVIENSIS comes. Three species remain whose habitats are doubtful or unknown. First of these is A. RUFIPES mentioned above, received in London alive from San Juan del Norta, Nicaragua. The type is unique and its habitat uncertain, as it may have been brought to San Juan from South America. The others are A. OSERYI in the Paris Museum, whose only habitat is given as "Haute Amazone, Pérou," (I. Geoff.); and A. SPIXI in the Collection of the same Institution, and said to have come from "Amérique Méridionale."

KEY TO THE SPECIES.

- A. Black lines on sides of head not going to the throat.
  - *a.* Black lines on head not going to the occiput.
    - *a.'* Black lines from eyes encircling the white and meeting on crown.
      - *a.''* Apical half of hairs on tail black to the roots.
        - *a.'''* Black lines on head broad.
          - $a.^4$ Hairs on back red and black towards root ....*A. infulatus.*
          - $b.^4$ Hairs on back slaty black towards root ....*A. nigriceps.*
        - *b.'''* Black lines on head narrow ....*A. senex.*

- *b.*′ Black lines from eyes not meeting on crown.
  - *a.*″ Apical half of hairs on tail yellowish to roots.
    - *a.*‴ Spot over eyes white.
      - *a.*⁴ Hands and feet red ....*A. rufipes.*
      - *b.*⁴ Hands and feet reddish brown..*A. roberti.*
      - *c.*⁴ Hands and feet yellowish brown ....*A. miriquouina.*
      - *d.*⁴ Hands and feet iron gray ..*A. boliviensis.*
    - *b.*‴ Spot over eyes buff...............*A. lanius.*
    - *c.*‴ Spot over and under eyes white..*A. vociferans.*
- *b.* Black lines on head going to occiput.
  - *a.*′ Black lines from eyes not meeting on crown.
    - *a.*″ Spot under and above eyes, legs and arms gray ....*A. griseimembra.*
    - *b.*″ No spot under eyes, only above.
      - *a.*‴ Spot over eyes white ....*A. trivirgatus.*
      - *b.*‴ Spot over eyes yellowish white.....*A. oseryi.*
      - *c.*‴ Spot over eyes buffy white, grading to russet on crown ....*A. gularis.*
      - *d.*‴ Spot over eyes reddish buff ......*A. microdon.*
- B. Lines on sides of head going to the throat ....*A. spixi.*

AOTUS INFULATUS (Kuhl).

Callithrix infulatus Kuhl, Beitr. Zool., 1820, p. 38; Reichenb., Vollständ. Naturg. Affen, 1862, p. 23.

Nyctipithecus felinus Spix, Simiar. et Vespert. Bras., 1823, p. 24, pl. XIV; Gray, Ann. Mag. Nat. Hist., X, 1st Ser., 1842, p. 256; *Id.* List Spec. Mamm. Brit. Mus., 1843, pl. XIV; I. Geoff., Cat. Primates, 1851, p. 39; Wallace, Proc. Zool. Soc. Lond., 1852, p. 197; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 106; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, p. 149; Reichenb., Vollständ. Naturg. Affen, 1862, p. 17, figs. 47, 48, 51; Bates, Nat. Riv. Amaz., II, 1863, p. 317; Mivart, Proc. Zool. Soc. Lond., 1864, p. 710; 1865, p. 587, (note); Anders., Cat. Mamm. Ind. Mus. Calc., 1881, p. 98; Forbes, Handb. Primates, I, 1894, p. 170.

Chirogaleus (!) *commersoni* Vig. and Horsf., Zool. Journ., IV, 1829, p. 112.

Cebus felinus Fisch., Syn. Mamm., 1830, p. 55; Bates, Nat. Riv. Amaz., II, 1863, p. 318.

Nyctipithecus commersoni Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 58.

THE FELINE DOUROUCOULI.

Type locality. Para, Brazil, South America. Type in Berlin Museum.

Geogr. Distr. Para to the region of the Upper Amazon; Peru.

Genl. Char. Three irregular facial streaks combining on the crown, the central one broad, fan-shaped.

Color. A white spot over each eye, between which is a fan-shaped black spot. The white spots do not extend on to the sides or crown of the head; a black line extends on each side of the head from just below the eyes to the crown, joining the central black spot; entire upper parts, and outer side of arms and legs gray with a yellowish tinge, darkest on dorsal region; cheek and throat whitish; under parts and inner side of limbs dark orange buff; tail for basal third ochraceous rufous, remainder black, base of hairs tawny ochraceous.

Measurements. Skull: occipito-nasal length, 57; Hensel, 40; zygomatic width, 40; intertemporal width, 31; palatal length, 16; breadth of braincase, 34; median length of nasals, 12; length of upper molar series, 14; length of mandible, 38; length of lower molar series, 17.

The type of *Callithrix* INFULATUS "Licht.," is in the Berlin Museum. Lichtenstein's name is only in manuscript and of course is not tenable. But Kuhl, when in Berlin, described in his Beiträge Zoologie, Lichtenstein's specimen under the name that was already given, and therefore it will stand as AOTUS INFULATUS Kuhl, and Spix's name of *felinus* given three years after will become a synonym.

Bates (l. c.) states he once saw an individual of this species which was surprisingly tame. It was as lively and nimble as the species of CEBUS, less mischievous, but far more confiding in its disposition and delighted to be caressed by all who came into the house. Its cleanliness and pretty ways and appearance made it a great favorite. The gentle disposition of this particular animal, however, might be attributed to the treatment it received from its owner, who allowed it to sleep with him in his hammock and to nestle in his bosom as he lay reading. Bates further relates, under the name of *N. felinus,* that he kept one of this species for many months, a young one having been given him by an Indian. A colony, to which this one belonged, was discovered by the Indian; for these animals even when sleeping are aroused by the least noise, and if one passes by the tree in which they have their nest, a number of owl-like striped faces appear at the edge of the hollow in the trunk. He was obliged to keep it chained and it never became familiar. It lived in a broad-mouthed glass jar placed in a box, and when any one entered the room it would dive head foremost into this, and turning around, thrust forth its face and stare at the intruder. At night it was very active, uttering at times a cry like a dog's suppressed bark, and scampered about to the length of its chain after cockroaches and spiders. When it tried to climb between the box and the wall, the space was straddled, bending the knuckles at an acute angle and resting upon the palms and tips of the outstretched fingers and toes and then mounted easily. The nails are flat on both fingers and toes, and their physiognomy is like that of an owl or tiger cat. By the Indians these monkeys are known as Ei-à. He found two species inhabiting the same forest of the higher and drier lands without intercrossing or even intermingling with each other. His captive ate all kinds of fruit, but preferred insects, and would not touch meat raw or cooked and was seldom thirsty. He was told by persons who had kept these monkeys about the house that they cleared the chambers of bats and insect vermin. When it was gently approached, his pet permitted one to caress it, but if roughly handled would bite severely, strike with its hands and make a hissing noise like that of a cat. It met an unfortunate fate, as it was killed by a Cairára monkey which was jealous.

Wallace writing on this species states, (l. c.) "of the curious Nocturnal Monkeys forming the genus *Nyctipithecus* there are two species in this district, (Valley of the Amazon), one which appears to be the N. TRIVIRGATUS of Humboldt, is found in the district of Ecuador, west of the Upper Rio Negro; the other closely allied, probably the *N. felinus* (=*A.* INFULATUS), on the Upper Amazon. Their large eyes, cat-like faces, soft woolly hair and nocturnal habits render them a very interesting group. They are called 'devil monkeys' by the Indians and are said to sleep during the day and to roam about only at night. I have specimens of them alive, but they are very delicate and soon die."

Spix's type of *A. felinus* from which my description was taken is in the Munich Museum in very good condition, and the colors well preserved. The skull is not in the specimen and my measurements given were taken from a skull in the British Museum Collection.

Chirogaleus (!) *commersoni* was described after an individual without any locality or history. The type has disappeared, and the description given in the Zoological Journal, 1829, p. 112, will cover various examples of different species, as no especial character is given that may be considered peculiar to the type alone.

It is, therefore, undeterminable and the name should be dropped from the list. That the examples belonged to the present genus and not to CHIROGALE is quite evident, the head markings alone being quite sufficient to establish this fact.

AOTUS NIGRICEPS Dollman.

Aotus nigriceps Dollman, Ann. Mag. Nat. Hist., LV, 8th Ser., 1909, p. 200.

Type locality. Chanchamayo, Peru. Type in British Museum.

Genl. Char. Black stripes on head; broad lateral ones uniting with central stripe on occiput; hands and feet dark; tooth rows curved; first and second molars nearly equal and largest; orbits large.

Color. A spot over each eye extending backward and curving inward in a narrow line and almost meeting at occiput, white; hairs on side of upper lip, white; line from cheeks extending over sides of head and broadening as it goes, joining a central line from forehead between eyes and passing over the crown, black; the junction of these three lines causes the occiput also to be black; sides of head, entire upper parts of body and outer side of limbs grizzled iron gray, darkest on dorsal line from middle of back where the hairs are tipped with reddish brown; hands and feet blackish brown; chin blackish; throat and entire under parts of body, and inner side of limbs, ochraceous buff; tail above at base, hairs orange buff with black, grading into buff yellow with black tips, and then becoming all black on apical fourth; beneath deep orange at base of hairs, grading into orange buff with black tips, and then all black. Ex type British Museum.

Measurements. Total length, 740; tail, 400; foot, 90. Skull: total length, 63.4; occipito-nasal length, 58; intertemporal width, 31.5; width of braincase, 33.7; Hensel, 41.7; zygomatic width, 39; median length of nasals, 96; palatal length, 18; length of upper molar series, 15; length of mandible, 37.5; length of lower molar series, 16. Ex type British Museum.

This species differs from all others in its black head and white stripes, and dark hands and feet. A large series is in the British Museum from Chanchamayo.

AOTUS SENEX Dollman.

Aotus senex Dollman, Ann. Mag. Nat. Hist., IV, 8th Ser., 1900, p. 200.

Type locality. Pozuzo, Peru. Type in British Museum.

Genl. Char. General color of head brownish gray; lateral black lines encircling the white on crown, not going to occiput; two thirds of tail black; first upper molar largest of the series.

Color. Forehead white divided in center by a fan shaped black line, and encircled by another black line commencing at corner of eyes; space beneath eyes covered with white hairs; head behind black line brownish gray; back of neck, and upper parts of body and flanks brownish gray; flanks grizzled gray; dorsal line darkest and reddest: outer side of limbs grizzled gray; under parts of body and inner side of limbs pale orange buff; hands and feet grizzled gray; tail above and beneath orange rufous at base, remainder black. Ex type British Museum.

Measurements. Total length, 750; tail, 430; foot, 90. Skull: total length, 65; occipito-nasal length, 60.3; intertemporal width, 33.5; width of braincase, 33.6; Hensel, 39.2; zygomatic width, 36.6; median length of nasals, 13.7; palatal length, 17; length of upper molar series, 15; length of mandible, 37.6; length of lower molar series, 16.9. Ex type British Museum.

In the head markings this species is similar to A. BOLIVIENSIS from Sara Province, Central Bolivia, but is much darker and more gray, and has the tail black for the greater part of its length; the cranial characters are different, and the orbits much smaller, the nasals narrower; palate longer and narrower.

AOTUS RUFIPES (Sclater).

Nyctipithecus rufipes Sclat., Proc. Zool. Soc. Lond., 1872, p. 3, pl. I; Alston, Biol. Amer. Central., I, Mamm., 1879, p. 15; Forbes, Handb. Primates, I, 1894, p. 169, pl. XV.

Aotus rufipes Elliot, Mamm. Middle Amer. and W. Indies, F. C. M. Pub., VI, Pt. II, 1904, p. 726, (AOTUS MIRIQUOUINA), figs. 165, CXXXIX, Zool. Ser.; *Id.* Check-L. Mamm. N. Amer. Cont. and W. Indies, F. C. M. Pub., VII, 1905, p. 533, Zool. Ser.

RED-FOOTED DOUROUCOULI.

Type locality. Nicaragua? Type in British Museum.

Geogr. Distr. Nicaragua? Central America.

Genl. Char. Triangular white patch over each eye; ears large, prominent, nearly naked; hands and feet rufous.

Color. Triangular white patch over each eye; three indistinct black lines on head from forehead and corner of eyes to crown; upper parts of body and outer side of limbs gray, tinged with reddish on dorsal region; under parts yellowish gray; inner side of limbs gray; hands and feet reddish brown; tail, basal half reddish brown, remainder reddish black. Ex type British Museum.

Measurements. Total length, 698; tail, 280. Skull: occipito-nasal length, 52; Hensel, 40; zygomatic width, 39; intertemporal width, 32; palatal length, 18; width of braincase, 32; median length of nasals, 10; length of upper molar series, 13. Ex type British Museum.

This species differs from all the rest in its reddish brown hands and feet. The stripes on the head are indistinct when compared with other species, and are very narrow. Doubtfully from Nicaragua.

AOTUS ROBERTI Dollman.

Aotus roberti Dollman, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 199.

ROBERT'S DOUROUCOULI.

Type locality. Matto Grosso, Brazil. Type in British Museum.

Color. Face black; whitish spot over eyes, between which is a fan-shaped black mark; brownish black line from corner of eye extends upwards on outer side of the white spot, and then outward and terminates on side of the crown; occiput, entire upper parts of body, grizzled buffy gray, the hairs being banded with buff and black and tipped with white; dorsal line from middle of back, and rump have a reddish tinge; upper lip and chin covered with short white hairs; entire under parts and inner side of limbs ochraceous buff; hands and feet reddish brown; tail above at base orange red, remainder black, beneath red grading into golden on basal half, rest black. Ex type British Museum.

Measurements. Total length, 640; tail, 260; foot, 85. Skull: total length, 64; occipito-nasal length, 57.6; intertemporal width, 31.7; breadth of braincase, 33; Hensel, 39; zygomatic width, 40.5; median length of nasals, 12.8; palatal length, 17; length of upper molar series, 15. Ex type British Museum.

The type in the British Museum differs chiefly in its yellowish gray color, and in having the lateral stripes on the head not encircling the white spots above the eyes, but continuing backwards on side of crown and terminating above the ears.

AOTUS MIRIQUOUINA (E. Geoffroy).

Pithecia miriquouina E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 117; Kuhl, Beitr. Zool., 1823, p. 43.

Simia (*Pithecia*) *azaræ* Humb., Obs. Zool., 1811, (1815), p. 359.
Nyctipithecus azaræ Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 212, (nec Synon); von Pelz., Kaiserl. Königl. Zool.-botanisch. Gesel. Wien, 1883, XXXIII, p. 18; Forbes, Handb. Primates, I, 1894, p. 170.
Nyctipithecus trivirgatus Rengg., Naturg. Säugth. Paraguay, 1830, p. 58, (nec Humb.).
Aotus azaræ Thos., Proc. Zool. Soc. Lond., 1903, p. 234.

AZARA'S DOUROUCOULI.

Type locality. Right bank of the River Paraguay, north-eastern part of the Argentine Republic.

Geogr. Distr. Argentine Republic.

Genl. Char. Large black patch between the superciliary spots.

Color. A white spot over each eye, extending backward in a narrow line to crown, and separating the central black spot from the black lateral lines, which extend from the angles of the mouth to the crown on each side of the head; entire upper parts iron gray, outer side of limbs iron gray like upper parts; under parts and inner side of limbs ochraceous buff; hands reddish brown, feet washed with gray; tail at base ochraceous rufous, hairs black tipped, remainder black.

Measurements. Skull: occipito-nasal length, 57; zygomatic width, 40.8; intertemporal width, 31.2; palatal length, 14.5; breadth of braincase, 35; median length of nasals, 11.7; length of upper molar series, 13.3; length of mandible, 40; length of lower molar series, 15.3.

AOTUS BOLIVIENSIS Elliot.

Aotus boliviensis Elliot, Ann. Mag. Nat. Hist., XX, 1907, 7th Ser., p. 189.

Type locality. Province of Sara, Central Bolivia. Type in British Museum.

Genl. Char. Similar in color to A. MIRIQUOUINA, but black on occiput and the cranial characters different. Orbits wider and higher; orbital portion of frontal bulging outward forming a decided curve from the frontal to the nasals; the nasals are longer and wider; braincase longer and narrower posteriorly; extreme width across orbits much greater; interior outline of skull much less curved; angle of occipital region much less; teeth larger, particularly the last upper molar; space from posterior edge of foramen magnum to interparietal much greater; basioccipital between bullæ much wider.

Color. Male similar to A. MIRIQUOUINA but more tinged with red on upper parts. A white spot over each eye extending back upon the head; a broad black line on middle of forehead from nose to between ears, and a narrow black line from corner of eye on each side of the head bordering the white; upper parts mixed iron gray and russet becoming more brownish on lower back; cheeks and chin white, sides yellowish brown; outer side of limbs iron gray, sometimes tinged with yellowish brown; inner side of limbs and under parts pale orange ochraceous; hands and feet dark grayish brown; tail mixed ochraceous rufous and black on basal half, remainder black. The hairs of tail are all ochraceous rufous at base and this shows more or less throughout the entire length.

Measurements. Total length, 720; tail, 400; foot, 100; ear, 35. Skull: total length, 64; occipito-nasal length, 61.5; Hensel, 44; zygomatic width, 40.5; intertemporal width, 33; extreme width of orbits, 45; height of orbits, 21; median length of nasals, 12; width of braincase, 35; distance from foramen magnum to interparietal, 11; width of basioccipital between bullæ anteriorly, 3.5; length of upper molar series, 14; length of mandible, 41; length of lower molar series, 16.

While similar in color to A. MIRIQUOUINA, the present species differs greatly in its cranial characters. The skull is much larger and the braincase considerably longer, while the orbits are enormous, very large even for these big eyed animals.

Two specimens, a male and female were obtained by Mr. T. Steinbach in Central Bolivia and are now in the collection of the British Museum. There was no difference in the colors of the sexes.

AOTUS LANIUS Dollman.

Aotus lanius Dollman, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 202; Allen, Bull. Am. Mus. Nat. Hist., N. Y., XXXI, 1912, p. 95.

WOOLLY DOUROUCOULI.

Type locality. Tolima Mountains; Toche River, Central Andes, Colombia, South America. Type in British Museum.

Genl. Char. Fur long, thick, soft, woolly; tail bushy.

Color. Spot over nose fan-shaped, black; spot over each eye buff extending backward in a narrow circular line on fore part of head, becoming reddish on hind part, and a black line from corner of eyes encircling the buff on sides of head but not extending on to the crown; crown, back of head, neck and dorsal region to rump red, hairs tipped with golden; flanks and outer side of limbs paler, grizzled brownish red; hairs on shoulders and limbs tipped with white; inner side of limbs brownish gray; chin and throat buffy gray; under parts of body orange buff; hands and feet black; tail at base above and beneath red like dorsal region, at root beneath chestnut, the red gradually merges into black on apical third, though the hairs retain the red from the roots to the tip. Ex type British Museum.

Measurements. Total length, 710; tail, 370; foot, 80. Skull: intertemporal width, 30.5; width of braincase, 32; Hensel, 41.3; zygomatic width, 38.8; median length of nasals, 14.1; palatal length, 17.5; length of upper molar series, 16; length of mandible, 37.8; length of lower molar series, 17; occipital region of skull gone. Ex type British Museum.

This species is remarkable for its thick woolly fur, suitable for an animal dwelling upon high mountains. It is peculiar also in not having the lateral black lines on head meeting in the rear, but stopping outside of the crown.

Mr. Frank M. Chapman during his Expedition to Colombia in 1911, obtained a flat skin of this species from a native on the Toche River, Central Andes, Province of Tolima, at an elevation of approximately 7,000 feet.

AOTUS VOCIFERANS (Spix).

Nyctipithecus vociferans Spix, Sim. et Vespert. Bras., 1823, p. 25, pl. XIX; Less., Spec. Mamm., 1840, p. 171; Wagn., Abhandl. Bay. Akad., V, 1848, p. 445; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 108; Reichenb., Vollständ. Naturg. Affen, 1862, p. 20, fig. 53; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 214; Alston, Biol. Amer. Centr., I, Mamm., 1879, p. 14.

Cebus vociferans Fisch., Syn. Mamm., 1829, p. 55.

Nyctipithecus lemurinus I. Geoff., Compt. Rend., XVI, 1843, p. 1151; *Id.* Archiv. Mus. Paris, IV, 1844, p. 25, pl. XI; *Id.* Voy. Venus, 1840-1855, Mamm., t. 3, fig. 2; I. Geoff., Cat. Primates, 1851, p. 39; Dahlb., Stud. Zool. Fam. Anim. Nat., fasc. I, 1856, pp. 148, 149; Reichenb., Vollständ. Naturg. Affen, 1862, p. 19, fig. 52; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 58; Sclat., Proc. Zool. Soc. Lond., 1872, p. 3.

Nyctipithecus trivirgatus Tschudi, Faun. Peruan., 1844, p. 49, (nec Humboldt).

Aotus vociferans Elliot, Mamm. Middle Amer. and W. Indies, F. C. M. Pub., IV, Pt. II, 1904, p. 729, Zool. Ser.; *Id.* Check-

L. Mamm. N. Amer. Cont. and W. Indies, F. C. M. Pub., VI, 1905, p. 534, Zool. Ser.

Nyctipithecus rufipes Forbes, Handb. Mamm., I, 1894, p. 169, pl. XV, (Part.).

NOISY DOUROUCOULI.

Type locality. Tabatinga on the Upper Marañon, eastern border of Peru. Type in Munich Museum.

Geogr. Distr. Upper Amazon; on banks of the Ucayali and Huallaga rivers, and on the Upper Marañon on eastern border of Peru; the mountains of Tolima, Colombia.

Genl. Char. Hair, long, loose, fluffy, thick; color uniform.

Color. Spot over and beneath each eye white; a fan-shaped black spot on center of head, and a lateral black line extending back on each side of the head towards occiput; entire upper parts and limbs cinnamon rufous, darkest on head and dorsal lines which are more reddish; under parts ochraceous buff; inner side of limbs grayish buff; hands and feet blackish brown, reddish in type; tail at base like dorsal line, a reddish cinnamon rufous, remainder black. The type of *N. lemurinus* I. Geoffroy, in the Paris Museum, has been examined, but it is so faded from exposure to light that it is impossible to recognize its original coloring, and one could only guess at it.

Measurements. Skull: occipito-nasal length, 58; zygomatic width, 40; intertemporal width, 30; median length of nasals, 12; breadth of braincase, 32; palatal length, 19; length of upper molar series, 14.5; length of mandible, 36; length of lower molar series, 15.

The type of this species is in the Munich Museum, but is now in a very poor condition. The hair has gone from the face and from a portion of the head over the right eye. There is no trace remaining of the black line on the side of the head, and the triangular black spot on top of the head has disappeared, while only a few hairs above and below the eyes indicate the white spots formerly existing. The fur is much faded, and discolored by time and exposure. There was no skull preserved.

In the Proceedings of the London Zoological Society, 1872, p. 3, Mr. Sclater identified a specimen stated by Dr. von Patten to have been collected in the forest of Quindin, Costa Rica, as the same as this species under the name of *N. lemurinus*. The locality given is probably an error, as no species of AOTUS is known to inhabit any part of Central America, and Alston (l. c.) says that Mr. Salvin thought a mistake had been made in the locality assigned, for the origins given to examples "obtained by this collector in other branches of Zoology have not always been free from doubt."

This species is most easily distinguished from A. INFULATUS by the three black stripes on the head, and the grayish white, or ochraceous buff on the forehead is carried back between the black stripes, not being restricted to the forehead alone as in the other species compared. The general color of the pelage is more reddish than in A. INFULATUS. Frequently in the make up of skins, especially in old material, the stripes on the head are confused with the white, and it is sometimes not easy to ascertain whether there are three stripes or not, the hairs having become twisted and set, and refuse to assume their proper position. Some individuals have the top of the head russet, and some are grayish.

AOTUS GRISEIMEMBRA Elliot.

Nyctipithecus felinus (nec Spix), Bangs, Proc. N. Eng. Zool. Club, I, 1900, p. 102, ex Santa Marta, Colombia.

Aotus griseimembra Elliot, Bull. Am. Mus. Nat. Hist., N. Y., 1912, p. 33; Allen, Bull. Am. Mus. Nat. Hist., N. Y., XXXI, 1912, p. 95.

Type locality. Hacienda Cincinnati, Santa Marta; and Rio Sinu Cereté, Bolivar; Colombia. Type in American Museum of Natural History, in New York.

Color. Spot above and below each eye white; a black patch beginning at a point on forehead between each eye and extending backward on crown, fan-shaped; jet black line extending from each eye on side of head and going to occiput; rest of head, neck and upper parts mixed cinnamon and black; arms and legs smoke gray, hairs tipped with buff; no cinnamon nor black present; hands mummy brown and black; feet black on sides, golden brown on center and on toes; sides of head and neck grayish; throat buff; rest of under parts and inner side of arms and thighs ochraceous buff; flanks grayish buff; tail at root above like upper parts, mixed black and cinnamon, beneath at root dark ochraceous rufous; sides on basal half buff, hairs black tipped; rest of tail jet black. Ex type in American Museum of Natural History in New York.

Measurements. Total length, 1,047; tail, 372; foot, 92.5, (Collector). Skull: total length, 60; occipito-nasal length, 58.2; zygomatic width, 36.5; intertemporal width, 32; median length of nasals, 11; breadth of braincase, 32; palatal length, 16.4; length of upper molar series, 13.5; mandible, 35; length of lower molar series, 15.3. Ex type in American Museum of Natural History in New York.

This species, while resembling somewhat A. VOCIFERANS, differs in being darker on the upper parts and especially in the gray arms and legs, the hairs buff tipped; and the black lines on sides of the head go to the occiput. Two examples were collected by Mr. Carriker in the mountains near the coast in Santa Marta; and two from the Rio Sinu Cereté, west of the mountains, Colombia, collected by Mrs. E. L. Kerr.

AOTUS TRIVIRGATUS (Humboldt).

Simia (*Aotus*) *trivirgata* Humb., Rec. Obser. Zool., I, 1811, p. 28.

Aotus trivirgatus Illig., Prodr. Syst. Mamm. Av., 1811, p. 71; E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 115.

Cebus trivirgatus Fisch., Syn. Mamm., 1829, p. 55; Blainv., Ostéog., 1841, Atl., Cebus, pls. III, VI.

Nyctipithecus trivirgatus E. Geoff., Cours Hist. Nat. Mamm., 1828, p. 19, 10me Leçon; F. Cuv., Hist. Nat. Mamm., 2me ed., 1833, p. 166, pl. LXVIII; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 226; V, 1855, p. 106; I. Geoff., Archiv. Mus. Hist. Nat. Paris, IV, pp. 24, 28; Gray, Ann. Mag. Nat. Hist., X, 1st Ser., 1842, p. 256; *Id.* List Spec. Mamm. Brit. Mus., 1843, p. 14; Wagn., Wiegm., Archiv., 2nd Part, 1843, p. 21; 1846, p. 136; Reichenb., Vollständ. Naturg. Affen, 1862, p. 17, figs. 47, 48; Bates, Nat. River Amaz., 1862, p. 316; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 58; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 213; Forbes, Handb. Primates, I, 1894, p. 168; von Pelz, Kaiserl-Königl. Zool.-botanische Gesellsch. Wien, XXXIII, 1883, p. 18.

Nyctipithecus douroucouli Less., Spec. Mamm., 1840, p. 169.

THREE-BANDED DOUROUCOULI.

Type locality. Banks of the Cassiquiare near the headwaters of the Rio Negro.

Geogr. Distr. Guiana, Upper Amazon region, Brazil.

Genl. Char. Three separate distinct black streaks on head, going to occiput. Skull narrowing towards occiput, and the posterior outline of braincase rounded; palate wide, narrowing but slightly anteriorly between canines.

Color. General hue dark gray with a silvery lustre caused by the white tips of the hairs; three black stripes on head from forehead to occiput; spots over eyes whitish, sometimes ochraceous buff; dorsal band reddish brown; outer side of arms and legs dark brownish gray; under parts ochraceous buff; inner side of arms buffy gray; legs grayish buff, more yellow than arms; hands dark grayish, feet yellowish brown; tail at base reddish brown, remainder black; sometimes the base of tail is tawny ochraceous.

Measurements. Total length, 605; tail, 330; hind foot, 85; ear, 25, (Collector). Skull: occipito-nasal length, 60; Hensel, 40; intertemporal width, 32; zygomatic width, 40; palatal length, 17; breadth of braincase, 33; median length of nasals, 10; length of upper molar series, 13; length of mandible, 40; length of lower molar series, 15.

Aotus oseryi (I. Geoffroy et Deville).

Nyctipithecus oseryi I. Geoff. et Deville, Compt. Rend., XXVII, 1848, p. 498; I. Geoff., Cat. Primates, 1851, p. 39; Casteln., Expéd. Amér. Sud, Mamm., 1855, p. 15, pl. II; Wagn., Schreb., Säugth. Suppl., 1855, p. 106; Dahlb., Stud. Zool. Fam. Reg. Anim. Nat., fasc. I, 1856, pp. 148, 149; Reichenb., Vollständ. Naturg. Affen, 1862, p. 18; Bartl. and Sclat., Proc. Zool. Soc. Lond., 1871, p. 220.

Type locality. "Haute Amazone, Pérou."

Genl. Char. Three stripes on head; no stripes on dorsal region; tail long.

Color. Central stripe from forehead to occiput, and two lateral lines from occiput to eyes, and down side of face to angle of mouth, black; yellowish white spot over eyes; top of head between stripes brownish gray; sides of head yellowish brown; upper parts of body and outer side of limbs pale yellowish brown, dorsal region reddish; under parts and inner side of limbs yellowish white, probably much deeper yellow originally; hands and feet very dark brown; face bare; tail with sides on basal half yellowish or pale ochraceous brown, top and remaining portion to tip, blackish brown. Ex type Paris Museum.

Measurements. In size about equal to A. INFULATUS.

Two specimens of this form are in the Paris Museum. It has usually been classed as a synonym of A. INFULATUS, or as the young of that species. The skull of A. OSERYI is in the mounted type, showing the teeth, and judging from what can be seen of these, the specimen would seem to be adult. It is an entirely different color from A. INFULATUS, and the three black stripes on the head are clear and distinct, going to the occiput which is not the case in A. INFULATUS. The general hue is a yellowish brown mixed with gray. The animal is full grown and shows no signs of immaturity, and with its decided head markings, an entirely different color, it seems hardly correct to unite it with A. INFULATUS. As is usual with the types of species of the earlier authors, no locality beyond "Haute Amazone, Pérou," is given with the specimens. The type was obtained by Castelnau and Deville in their expedition to South America and was figured in the Atlas of their published work.

AOTUS GULARIS Dollman.

Aotus gularis Dollman, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 201.

Type locality. Mouth of Rio Chocho on Upper Rio Napo, Ecuador. Type in British Museum.

Color. Three heavy black lines, one from the corner of each eye and one from above the nose, all meeting on the occiput; buffy white spot above each eye, grading into russet, extending backward to occiput; sides of head and neck, and flanks, brownish gray; dorsal line mars brown, hairs purplish on basal half, and banded with mars brown and black; outer side of arms dark brownish gray; outer side of legs like flanks; chin, throat and chest gray; under parts of body, and inner side of legs buff; hands and feet black; tail at base above and beneath orange, remainder to tip black. Ex type British Museum.

Measurements. Total length, 690; tail, 350; foot, 20. Skull: total length, 63.4; occipito-nasal length, 59.3; intertemporal width, 34; breadth of braincase, 33; Hensel, 40; zygomatic width, 40; median length of nasals, 12; palatal length, 16; length of upper molar series, 15; length of mandible, 37.6; length of lower molar series, 16.4. Ex type British Museum.

This animal differs from A. MICRODON from Macas, in its gray body and the jet black stripes on the head, and from A. NIGRICEPS in the russet portion of the crown stripe, and in the mars brown of the dorsal region, and brownish gray flanks. The molar series of teeth are smaller.

AOTUS MICRODON Dollman.

Aotus microdon Dollman, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 203.

Type locality. Macas, Ecuador.

Genl. Char. Fur woolly, long, soft; three lines on head, lateral one not meeting on occiput; tail bushy.

Color. Similar to A. LANIUS but paler; a buff line from above eyes extending back to occiput, and a brownish black line from corner of each eye to crown only; occiput, and dorsal region to tail yellowish red, much paler than this portion in A. LANIUS; outer side of arms and flanks yellowish gray, the flanks paler than arms and more yellow; outer side of legs similar to flanks; chin, throat, under part of body and inner side of limbs buff; hands and feet reddish brown; tail above and beneath on basal half orange, hairs black tipped, remaining portion to tip, black. Ex type British Museum.

Measurements. Total length, 580; tail, 220; foot, 80, (skin). Skull: total length, 65.5; occipito-nasal length, 59.1; intertemporal width, 60.5; zygomatic width, 57.7; breadth of braincase, 31.6; median length of nasals, 13.3; palatal length, 15.4; length of upper molar series, 13.5; length of mandible, 35.4; length of lower molar series, 16.1. Ex type British Museum.

This species while having woolly, thick fur, and bushy tail like A. LANIUS is much lighter in color and quite differently marked upon the head. The tooth rows are much shorter. The unique type in the British Museum was obtained at Macas in Ecuador, and probably the species is found in high latitudes on the mountains.

AOTUS SPIXI (Pucheran).

Nyctipithecus spixi Pucher., Rev. Mag. Zool., 1857, pp. 335, 352; Reichenb., Vollständ. Naturg. Affen, 1862, p. 20.

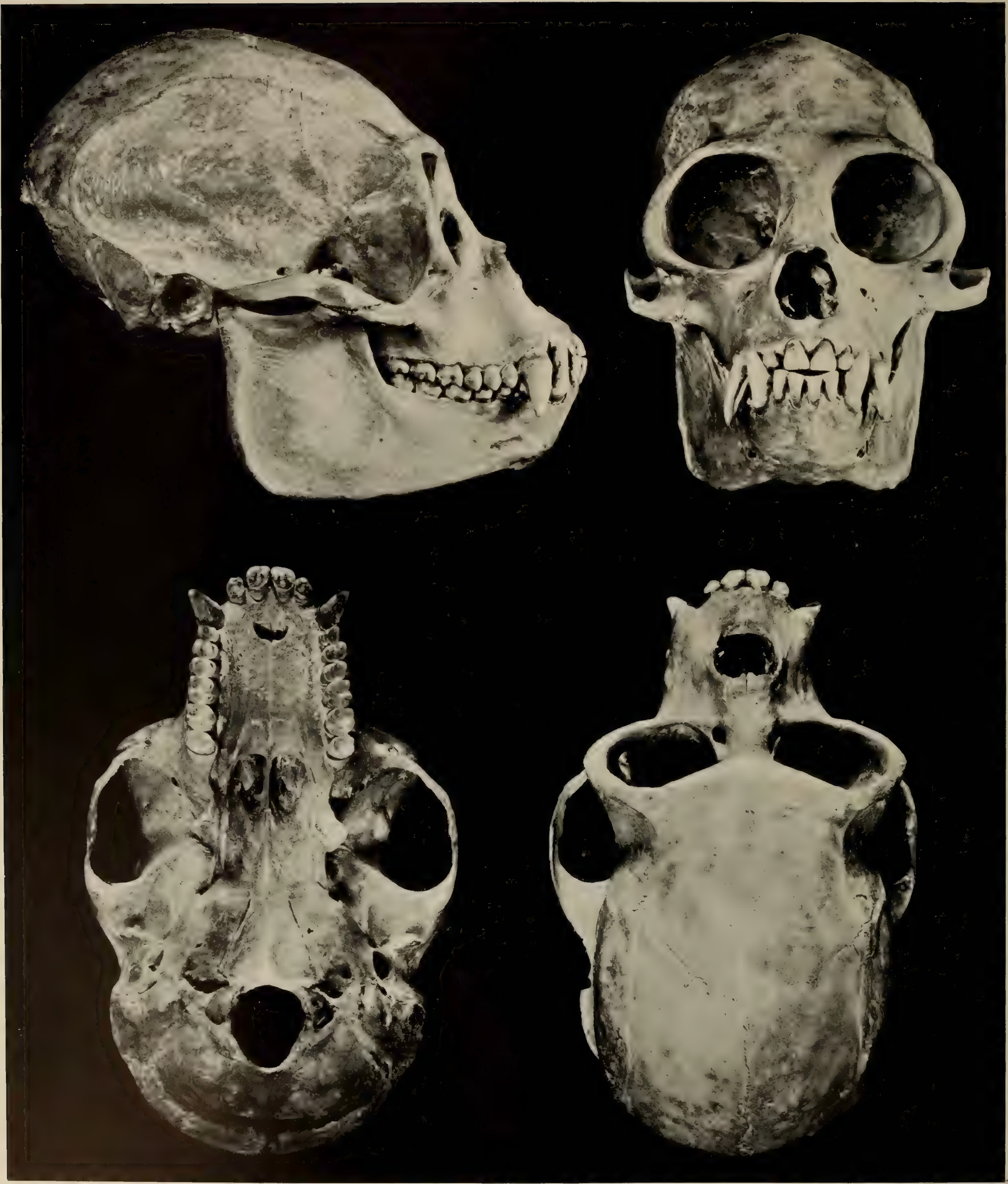
Type locality. "Amérique Méridionale." Type Paris Museum.

Genl. Char. Three brownish black lines on head, one central, and two lateral extending to occiput. Size moderate, tail long.

Color. Top of head with the central and two lateral brownish black lines; spots over eyes grayish white, extending back to occiput, and graduating into grayish brown; dorsal line golden, indistinct on middle of back, clearer on rump; nape, sides of head, upper parts and outer side of limbs, brownish gray, hairs tipped with white; sides paler; the lateral brownish black lines extending down each side of the face and meeting on the throat below chin, which is whitish; under parts and inner side of limbs pale yellow; hands and feet reddish brown, mixed with white hairs on hands; tail, basal half grayish brown like flanks on under parts and side, above black, apical half black; face bare save a few white hairs on lips. Ex type Paris Museum.

Measurements. Total length, 412.8; tail, 298.33.

The type of this form died in the Menagerie of the Jardin des Plantes, and was described by Pucheran (l. c.). In having the three stripes on the head it is nearer TRIVIRGATUS and RUFIPES, than VOCIFERANS. It is a plain little animal, a dull grayish brown constituting the general color of its coat. The under parts were probably a deeper yellow, as the hair is faded, not only beneath but over the body generally, and originally it was probably considerably darker. The golden dorsal line, broadest on the lower part of the back, distinguishes this form from RUFIPES and TRIVIRGATUS, which have this part reddish and chestnut respectively. The continuation of the lateral stripes to the throat where they meet, also distinguishes this species from all others. The stripes from mouth across the throat, while of the same color as the lateral ones on the head, are fainter.



ATELEUS BELZEBUTH.

No. 94.12.18.1. Brit. Mus. Coll. ⅘ Nat. Size.

Subfamily 4. Cebinæ.

GENUS *ATELEUS. SPIDER MONKEYS.

$$\text{I. } \frac{2-2}{2-2};\quad \text{C. } \frac{1-1}{1-1};\quad \text{P. } \frac{3-3}{3-3};\quad \text{M. } \frac{3-3}{3-3} = 36.$$

ATELES (!) E. Geoff., Ann. Mus. Hist. Nat. Paris, VII, 1806, p. 262. Type *Simia paniscus* Linnæus.

Cercopithecus Blumenb., Handb. Naturg., I, 1779, p. 68. (nec Gronow, 1763, nec Brunnich, 1772, nec Erxleben, 1777).

Sapajus Kerr, Anim. Kingd., Mamm., I, 1792, p. 74, (Part.).

Sapajou Lacépèd., Tabl. Mamm., 1799, p. 4.

Atelocheirus E. Geoff., Ann. Mus. Hist. Nat. Paris, VII, 1806, p. 272.

Paniscus Rafin., Analyse de la Nature, 1815, p. 53, (nec Schrank. 1802 Hymenopt.).

Sapaju Ritgen, Naturl. Einth. Säugth. Giess., 1824, p. 33.

Body light, slender; limbs long, slender; arms longer than legs; head rounded, muzzle projecting; thumb rudimentary, or absent; tail very long, naked beneath, tip prehensible; fur coarse, not woolly; canines large with a diastema between them and the incisors; middle upper incisors long, broad, larger than outer; molars four cusped with transverse ridges between.

The Spider Monkeys constitute one of the most remarkable groups of the Primates, and the tail as a prehensile organ has attained what may be considered the greatest degree of perfection of which it is capable. As an arboreal animal this Monkey represents the highest development of the Quadrumana of the New World as far as known, no other member of the Order in past or present time, in the Western Hemisphere, has approached nearer the higher forms of the Old World.

The tail is unsurpassed, if not unequalled, in its flexibility, always in motion, the tip as sensitive as that of the elephant's trunk, grasping

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*Ατελησ *α* priv. and *τελοσ,εοσ* a neuter noun, which with the *α* priv. would be, when Latinized, ATELEUS, which should be the generic name for the Spider Monkeys.

with an unshakable firmness anything and everything it may touch, and fulfilling in the highest degree and with an admirable service, the purposes of a fifth hand. By it, fruits or other desirable objects otherwise unattainable are seized and brought within reach of the mouth or hands, and it also can hold its possessor suspended in the air, and allow the hands and feet to act with complete freedom. While members of other genera of the Order possess prehensile tails, in comparison with that of ATELEUS they perform but a restricted service. Another feature of this group is the absence of the thumb, existing in a rudimentary condition in one or two forms, and this probably is an advantage to the animal as it travels through the forest, permitting without hindrance the long hand to slide over and grasp the branches in its swift progress, which the opposing thumb, might at times prevent. Against this theory, however, is the fact that the members of HYLOBATES, of the Old World Apes, which are strictly arboreal animals, and whose flight through the forest can only be compared in ease and swiftness to the passage of a bird, possess very long thumbs. The limbs of ATELEUS are long, the arms exceeding the legs in length; the body is comparatively small, with the stomach protruding, and covered with rather coarse long hair, but without any woolly under fur. The lumbar region of the skeleton is short, but the dorsal segment attains a greater relative length than in any other Monkey.

The tail has twenty-three vertebræ, flattened beneath, and with processes present for the attachment of muscles for increasing its efficiency as a prehensile organ. A median air sac is situated in the back of the larynx, but there is no such provision for increasing the power of the voice as witnessed in the vocal apparatus of the Howling Monkeys.

LITERATURE OF THE SPECIES AND SUBSPECIES.

1758. *Linnæus, Systema Naturæ.*
ATELEUS PANISCUS described as *Simia paniscus.*

1777. *Erxleben, Systema Regni Animalis.*
In the list here given one species, ATELEUS PANISCUS, is included in the genus CEBUS.

1806. *E. Geoffroy St. Hilaire, in Annales du Muséum d'Histoire Naturelle, Paris.*
In this Memoir five species are included in the genus ATELEUS, viz.: Le Chamek, *A. pentadactylus* = A. PANISCUS; La Coaita, A. PANISCUS; *L'arachnoide,* A. ARACHNOIDES = BRACHYTELEUS

ARACHNOIDES; La belzebuth, A. BELZEBUL; and La Camail, COLOBUS POLYCOMUS.

1809. *E. Geoffroy St. Hilaire, in Annales du Muséum d'Histoire Naturelle, Paris.*
ATELEUS MARGINATUS described.

1811 *Humboldt et Bonpland, Recueil d'Observations de Zoologie*
(1815) ? *et d'Anatomie Comparée.*
Le Chuva de Bracamorros is a trivial name here given to a species of ATELEUS, A. VARIEGATUS Wagner, but is afterward in the same volume called *A. marginatus,* an appellation bestowed on quite a different species of the same genus, by E. Geoffroy Saint-Hilaire two years before.

1812. *E. Geoffroy St. Hilaire, in Annales du Muséum d'Histoire Naturelle, Paris.*
A repetition of the list of the species of ATELEUS given in 1806.

1820. *Kuhl, Beiträge zur Zoologie und Vergleischenden Anatomie.*
Seven species of ATELEUS are given in this work, viz.: A. GEOFFROYI first described; *A. pentadactylus* = A. PANISCUS; A. MARGINATUS; A. PANISCUS; *A. belzebuth; A. arachnoides* and *A. hypoxanthus* both belonging to the genus BRACHYTELEUS; and *A. fuliginosus* = A. BELZEBUTH.

1820. *Desmarest, Mammalogie et Descriptions des Mammifères.*
A list of species of ATELEUS, seven in number similar to that of Kuhl, but A. GEOFFROYI is redescribed as *A. melanochir;* and *A. subpentadactylus* = A. PANISCUS.

1823. *F. Cuvier, Histoire Naturelle des Mammifères.*
ATELES (!) ATER first described.

1829. *I. Geoffroy St. Hilaire, in Annales du Muséum d'Histoire Naturelle, Paris.*
ATELES (!) HYBRIDUS first described.

1829. *Fischer, Synopsis Mammalium.*
Seven species and two varieties of ATELEUS are here enumerated under the genus CEBUS. (*C.*) ARACHNOIDES, and (*C.*) *hypoxanthus,* the latter a synonym of the former, and belonging to the genus BRACHYTELEUS. (*C.*) *pentadactylus* = A. PANISCUS. A. PANISCUS with two varieties; (*C.*) *surinamensis* ex Surinam = *A. paniscus;* and *b.* (*C.*) *cayennensis* ex Cayenne = A. ATER; (*C.*) ATER; (*C.*) *fuliginosus* = A. BELZEBUTH; (*C.*) GEOFFROYI; (*C.*) *brissoni* = A. BELZEBUTH; and (*C.*) MARGINATUS.

1830. *Fischer, Addenda, Emmendanda et Index ad Synopsis Mammalium.*
A repetition of the list of ATELEUS given in the Synopsis.

1830. *E. Geoffroy St. Hilaire et F. Cuvier, Histoire Naturelle des Mammifères.*
A. MARGINATUS figured as 'le Coaita a front blanc.'

1831. *Bennett, in Proceedings of the Zoological Society of London.*
ATELEUS MARGINATUS redescribed as *Ateles* (!) *frontatus.*

1840. *Wagner, Schreber, Die Säugthiere in Abbildungen nach der Natur mit Beschreibungen. Supplementband.*
Seven species are here given under ATELES (!) only five of which belong to the genus, viz.: A. PANISCUS with var. *B. pentadactylus* an individual variation, the specimen having a rudimentary thumb; A. MARGINATUS; A. BELZEBUTH; A. GEOFFROYI; and A. HYBRIDUS. The other two *A.* ARACHNOIDES, and *A. hypoxanthus,* both representing the same species, belong to the genus BRACHYTELEUS, but are here placed in a subsection *Eriodes.*

1840. *R. P. Lesson, Species des Mammifères Bimanes et Quadrumanes.*
ATELEUS has here seven species: A. PANISCUS; A. MARGINATUS; A. ATER; A. HYBRIDUS; A. BELZEBUTH; *A. melanochir* = A. GEOFFROYI; and *A. chamek* = A. PANISCUS.

1842. *J. E. Gray, in Annals and Magazine of Natural History.*
ATELEUS GEOFFROYI redescribed as *Eriodes frontatus.*

1844. *Schinz, Systematisches Verzeichniss aller bis jetzt bekannten Säugethiere, oder Synopsis Mammalium nach der Cuvier'schen System.*
ATELEUS MARGINATUS redescribed as *A. albifrons.*

1851. *I. Geoffroy St. Hilaire, in Catalogue des Primates.*
The seven species usually enumerated by previous Authors are contained in this list. Those not valid are *A. pentadactylus* = A. PANISCUS (Linn.), and *A. melanochir* = A. GEOFFROYI.

1855. *Wagner, Schreber, Die Säugthiere Abbildungen nach der Natur mit Beschreibungen. Supplementband.*
Seven species of ATELEUS are here given of which six are valid: A. PANISCUS; A. ATER; A. MARGINATUS; A. BELZEBUTH; A. VARIEGATUS; (this not in previous list of 1840), and A. HYBRIDUS. *A. melanochir* = A. GEOFFROYI. In subgenus *Eriodes* the species of BRACHYTELEUS is placed, B. ARACHNOIDES and its synonym *B. hypoxanthus.*

1862. *Reichenbach, Die Vollständigste Naturgeschichte der Affen.* In this work ATELEUS contains the following species: A. ATER; A. PANISCUS; A. BELZEBUTH; A. MARGINATUS; A. VARIEGATUS; *A. melanochir* = A. GEOFFROYI; and A. HYBRIDUS, I. Geoffroy.

1862. *J. H. Slack, in Proceedings of the Academy of Natural Sciences of Philadelphia.* The seven species of ATELEUS are here placed in the genus Sapajou, Lacépède. The only non valid form is *A. pentadactylus* = A. PANISCUS. The male of A. VARIEGATUS Wagner, is described for the male A. GEOFFROYI; the description of the female only being correct for that species.

1865. *J. E. Gray, in Proceedings of the Zoological Society of London.* ATELEUS GRISESCENS; A. CUCULLATUS; and A. FUSCICEPS first described, and A. BELZEBUTH Geoff., redescribed as *A. vellerosus.*

1867. *J. E. Gray, in Proceedings of the Zoological Society of London.* ATELEUS VARIEGATUS redescribed as *A. bartletti.*

1870. *J. E. Gray, Catalogue of Monkeys, Lemurs and Fruit-eating Bats, in the Collection of the British Museum.* In the Tribe *Lagotrichina* are placed the three genera, ATELES (!), LAGOTHRIX and BRACHYTELES (!). Twelve species are enumerated as belonging to the first of these, viz.: A. ATER; A. PANISCUS; A. FUSCICEPS; A. GRISESCENS; A. CUCULLATUS; A. MARGINATUS; A. HYBRIDUS; A. GEOFFROYI; *A. melanochir* = A. GEOFFROYI; A. *ornatus* = A. GEOFFROYI; *A. albifrons* (nec Schinz), = A. GEOFFROYI; A. BELZEBUTH; and *A. vellerosus* = A. BELZEBUTH.

1872. *P. L. Sclater, in Proceedings of the Zoological Society of London.* ATELES (!) RUFIVENTRIS first described.

1876. *Schlegel, Muséum d'Histoire Naturelle des Pays-Bas, Simiæ.* In this work the species included in ATELEUS are divided into two groups, the true and the woolly, these last now placed in the genus BRACHYTELEUS. The true are separated into two divisions, A. those with a crest and B. those without. The first of these is subdivided into five sections; *a.* with nearly the entire face naked and the pelage black and shining. Three species are apportioned to this section; A. PANISCUS; A. ATER; and *A. pentadactylus* = A. PANISCUS; *b.* cheeks and chin more or less hairy; pelage of various colors. Three species are included here; A. FUSCICEPS; A. MARGINATUS; and *A. chuva*

= A. VARIEGATUS; *b.* sides of face and beneath body, white, or reddish white, or yellowish white, more or less prominent. Three species are placed here; A. BELZEBUTH; *A. fuliginosus* = A. BELZEBUTH; A. PAN described for the first time; γ. crest black but short, body beneath red or reddish, above brownish red, or grayish, more or less pronounced, sometimes uniform black, a color which prevails on the extremities, and often on top of the head. Two species are found here; A. RUFIVENTRIS and A. GEOFFROYI. The second division has but one species, A. HYBRIDUS characterized by a small head with a large clear spot, and no crest. The second group contains the woolly Spider Monkeys, A. ARACHNOIDES and *A. hypoxanthus* = A. ARACHNOIDES, one species, now in BRACHYTELEUS.

1879- *Alston, Biologia Centrali Americana. Mammalia.*
1882. Four species of ATELEUS are here recorded. A. ATER; A. RUFIVENTRIS; A. GEOFFROYI; *A. vellerosus* = A. BELZEBUTH; of which A. PAN Schlegel, and *A. fuliginosus* Kuhl = A. BELZEBUTH are considered synonymous; though the Author thinks that the original description of Kuhl's species applies better to the dull gray varieties of A. GEOFFROYI. The geographical distribution of the species recognized is carefully given.

1883. *Von Pelzeln, Brasilische Säugethiere, Resultate von Johann Natterer's Reise in den Jahren* 1817 *bis* 1835.
Two species of ATELEUS only are here recorded. A. PANISCUS, from Fazenda do Padre Battista, May, am Flusse Sararigeschossen; Montogrosso, November; Rio Guaporé, volta del campo dos Veados, July; Rio Marmoré, August; Rio Madeira, etwas oberhalb des Rio Abuna, September; and A. VARIEGATUS.

GEOGRAPHICAL DISTRIBUTION OF THE SPECIES.

The Spider Monkeys have a wide distribution extending from the State of Vera Cruz in Mexico, through Central America into northern South America, where they are found in the forests through which the Orinoco and Amazon with their tributaries flow, to the Pacific Coast States of Colombia, Ecuador and Peru. In the State of Vera Cruz, Mexico, and southward into Guatemala, in which country it goes from the Atlantic to the Pacific, *A. pan* is found and is the only representative of the genus in Mexico. Two other species are known to inhabit Central America. A. GEOFFROYI from Nicaragua, and A. ATER, both extending their range into Colombia, the latter going even to Peru. A. RUFIVENTRIS is doubtfully from Panama, the type coming from the Rio Atrato in Colombia. In the Guianas, and on the banks of the Orinoco, and also on those of the Lower and Upper Amazon with such tributaries as the Rio Madeira, R. Marmoré, R. Guaporé and R. Carari, and ranging as far to the westward as the Rio Marañon, Peru, A. PANISCUS occurs. On the Upper Rio Cauca, a tributary of the Orinoco, A. VARIEGATUS is met with, ranging westward into Peru in the Province of Jean de Bracamorros, and at Chayavetas, Nautuas and Elvira, Peruvian Amazons. A. MARGINATUS is found in the vicinity of Para, Lower Amazon, and on the banks of the Rio Tocantins. Above the great rapids of the Orinoco, at Atures and Maypures, A. BELZEBUTH occurs; and in Colombia in the Valley of the Magdalena, A. HYBRIDUS is supposed to dwell. A. FUSCICEPS has only been met with in the trans-Andean districts of Ecuador. There remain two rather doubtful species whose habitats are quite unknown, A. GRISESCENS and A. CUCULLATUS.

KEY TO THE SPECIES.

A. Head and back black.
  a. Under parts black.
    a.' Face flesh color.
      a." Forehead, crown and whiskers black...*A. paniscus.*
      b." Forehead, crown and whiskers white.*A. marginatus.*
    b.' Face black ....*A. ater.*
  b. Under parts, grayish yellow ....*A. variegatus.*
  c. Under parts bright rufous ....*A. rufiventris.*
B. Head and back mixed black and silvery gray or golden.
  a. Hair on head not projecting over forehead; back more black than gray ....*A. grisescens.*
  b. Hair on head projecting over forehead; back more gray than black ....*A. cucullatus.*
C. Head black, back blackish chestnut grading into golden.
  a. Under side of arms and legs grayish yellow .....*A. belzebuth.*
  b. Under side of arms and legs mostly black, yellow restricted to narrow line on forearm ....*A. pan.*
D. Head yellowish wood brown, back black tinged with burnt umber brown ....*A. fusciceps.*
E. Head buff, back grayish drab, (typical) ....*A. geoffroyi.*
F. Head blackish brown, triangular white mark on forehead ....*A. hybridus.*

Ateleus paniscus (Linnæus).

Simia paniscus Linn., Syst. Nat., I, 1758, p. 26; I, 1766, p. 137; Bodd., Elench. Anim., 1784, p. 61.

Cebus paniscus Erxl., Syst. Reg. Anim., 1777, p. 46.

Ateles (!) *paniscus* E. Geoff., Ann. Mus. Hist. Nat. Paris, VII, 1806, p. 270; F. Cuv., Hist. Nat. Mamm., 1819, livr. V, 2me ed., 1833, p. 152, pl. LIV; Kuhl, Beitr. Zool., 1820, p. 24; Desm., Mamm., 1820, p. 73; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 196, pls. XXVI, XXVII; V, 1855, p. 75; Less., Spec. Mamm., 1840, p. 128; Tschudi, Faun. Peruan., 1844, p. 31; I. Geoff., Cat. Primates, 1851, p. 48; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, p. 171; Huxley, Proc. Zool. Soc. Lond., 1861, p. 247, (Brain); Reichenb., Vollständ. Naturg. Affen, 1862, p. 59, figs. 148-149; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 42; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 169; Anders., Cat. Mamm. Ind. Mus. Calc., 1881, p. 83; von Pelz., Brasil. Säugeth., 1883, p. 9; Forbes, Handb. Primates, I, 1894, p. 237; Thos., Proc. Zool. Soc. Lond., 1911, p. 127.

Ateles (!) *pentadactylus* E. Geoff., Ann. Mus. Hist. Nat. Paris, VII, 1806, p. 269; *Id.* Cours Hist. Nat. Mamm., 1828, p. 30, 9me Leçon; Kuhl, Beitr. Zool., 1820, p. 23; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 197, var. B; V, 1855, p. 74; Tschudi, Faun. Peruan., 1844, p. 28; I. Geoff., Cat. Primates, 1851, p. 48; Dahlb., Stud. Zool. Reg. Anim. Natur., fasc. I, 1856, p. 171; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 172.

Simia chamek Humb., Rec. Obs. Zool., I, 1811, (1815), p. 355; Less., Spec. Mamm., 1840, p. 133.

Ateles (!) *subpentadactylus* Desm., Mamm., 1820, p. 73.

Cebus chamek Fisch., Syn. Mamm., 1829, p. 38.

Cebus paniscus Fisch., Syn. Mamm., 1829, p. 39.

Cebus paniscus surinamensis a. Fisch., Syn. Mamm., 1829, p. 39.

Cebus paniscus cayennensis b. Fisch., Syn. Mamm., 1829, p. 39.

Sapajou paniscus Slack, Proc. Acad. Nat. Scien. Phil., 1862, p. 509.

Sapajou pentadactylus Slack, Proc. Acad. Nat. Scien. Phil., 1862, p. 510.

RED-FACED SPIDER MONKEY.

Type locality. America Meridionali. "Brasilia."

Geogr. Distr. The Guianas; lowlands of the Lower and Upper Amazon; banks of the Rio Madeira, Rio Marmoré, Rio Guaporé and Rio Carari (Natterer); Lower Rio Marañon, Peru, (Tschudi).

Genl. Char. Face naked, flesh color; fur coarse, hair long; rudiment of thumb sometimes present.

Color. Entirely black; body, limbs, hands, feet and tail.

Measurements. Skull: total length, 118; occipito-nasal length, 98; Hensel, 80; zygomatic width, 67; intertemporal width, 51; palatal length, 36; breadth of braincase, 62; median length of nasals, 14; length of upper molar series, 24; length of mandible, 71; length of lower molar series, 28. Vertebræ: Cervical, 7; Dorsal, 13; Lumbar, 4; Sacral, 3; Caudal, 31.

Bates speaking of the Monkeys in the forests in the neighborhood of Obydos, refers to one which in all probability was the present species, but called *pentadactylus* on account of the presence in the individual of a rudimentary thumb. He states that one species of Coaita has a rudiment of thumb without a nail. The flesh of this monkey is much esteemed by the natives in this part of the country, and the Military Commandant of Obydos, Major Gama, every week sent a negro hunter to shoot one for his table. Coaitas are more frequently kept in a tame state than any other kind of monkey. The Indians are very fond of them as pets, and the women often suckle them when young at their breasts. They become attached to their masters, and will sometimes follow them on the ground to considerable distances. I once saw a most ridiculously tame Coaita. It was an old female which accompanied its owner, a trader on the river, in all his voyages. By way of giving me a specimen of its intelligence and feeling, its master set to and rated it soundly, calling it scamp, heathen, thief, and so forth all through the copious Portuguese vocabulary of vituperation. The poor monkey, quietly seated on the ground, seemed to be in sore trouble at this display of anger. It began by looking earnestly at him, then it whined, and lastly rocked its body to and fro with emotion, crying piteously, and passing its long arms continually over its forehead, for this was its habit when excited, and the front of the head was worn quite bald in consequence. At length its master altered his tone. It is all a lie my old woman; you're an angel, a flower, a good affectionate creature and so forth. Immediately the poor monkey ceased its wailing and soon after came over to where the man sat. The disposition of the Coaita is mild in the extreme; it has none of the restless vivacity of its kindred the Cebi, and no trace of the surly, untamable temper of its still nearer relatives the Mycetes or Howling Monkeys. It is, however, an arrant thief and shows considerable cunning in pilfering small articles of clothing which it conceals in its sleeping place.

Ateleus ater F. Cuvier.

Ateles (!) *ater* F. Cuv., Hist. Nat. Mamm., I, 1823, Liv. XXXIV, 2nd ed., 1833, p. 157, pl. LIII; Less., Spec. Mamm., 1840, p. 128; I. Geoff., Cat. Primates, 1851, p. 48; Wallace, Proc. Zool. Soc. Lond., 1852, p. 108; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 71, pl. XXXVI A; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 171, 172; Reichenb., Vollständ. Naturg. Affen, 1862, p. 59, figs. 643, 644; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 42; Bartl., Proc. Zool. Soc. Lond., 1871, p. 218; Sclat., Proc. Zool. Soc. Lond., 1872, p. 5; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 170; Alston, Biol. Centr. Amer., I, Mamm., 1879, p. 7; Anders., Cat. Mamm. Ind. Mus. Calc., 1881, p. 83; Forbes, Handb. Primates, I, 1894, p. 241; Elliot, Mamm. Middle Amer. and West Ind., Pub. Field Columb. Mus., IV, Pt. II, 1904, p. 734, Zool. Ser.; *Id.* Cat. Mamm. Field Columb. Mus., VI, 1905, Zool. Ser.; Allen, Bull. Am. Mus. Nat. Hist., N. Y., XXXI, 1912, p. 95.

Cebus ater Fisch., Syn. Mamm., 1829, p. 40.

Sapajou ater Slack, Proc. Acad. Nat. Scien. Phil., 1862, p. 510.

BLACK SPIDER MONKEY.

Type locality. Cayenne, French Guiana. Type in Paris Museum.

Geogr. Distr. Panama; French Guiana; Rio Sinu Cereté, Bolivar; Colombia, and Eastern Peru. Banks of Rio Ucayali, Rio Chamicurus and Rio Huallaga, (Bartlett).

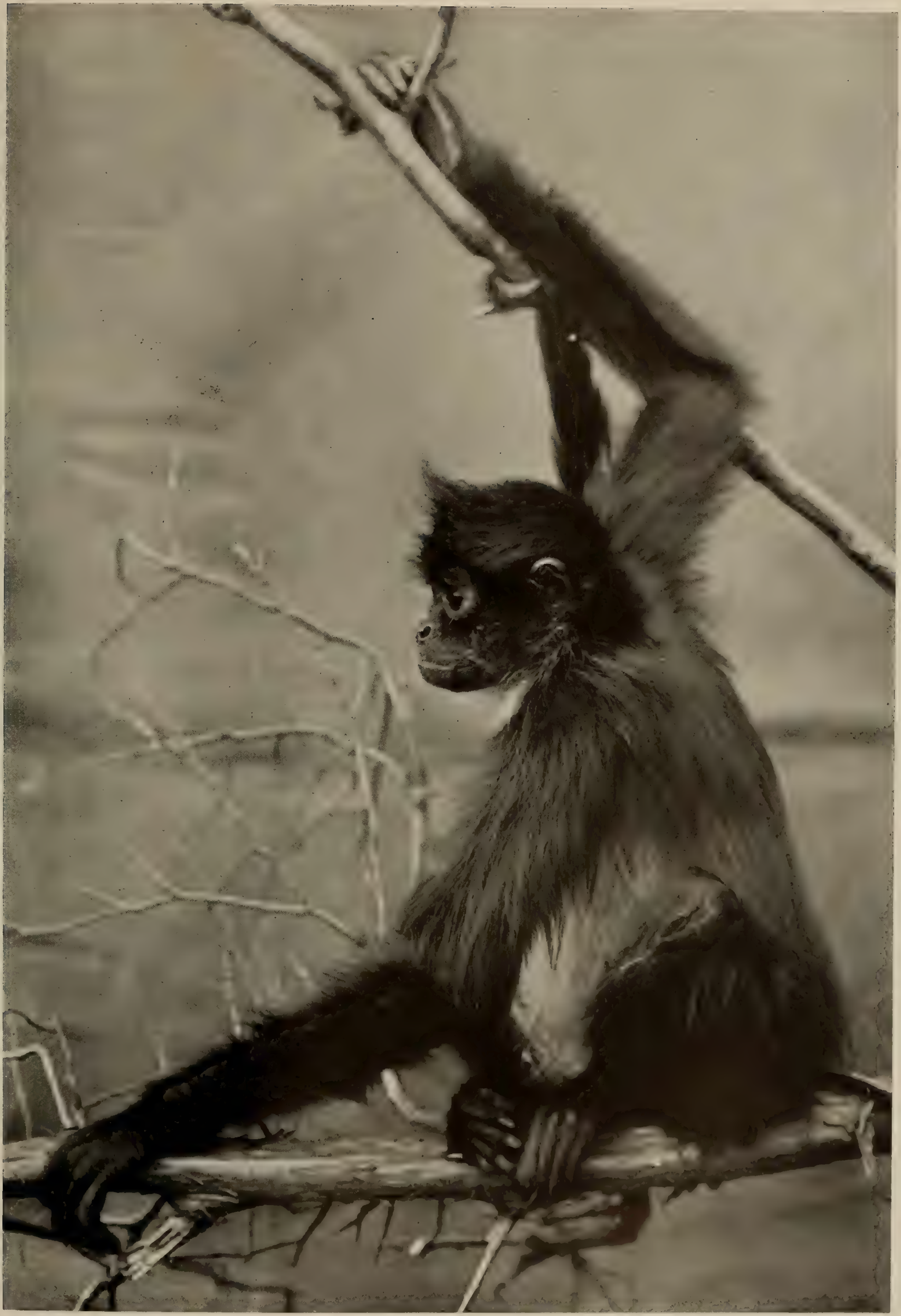
Genl. Char. Face black. Thumb absent.

Color. Like A. PANISCUS, entirely black, face black.

Measurements. Skull: total length, 119; occipito-nasal length, 102; Hensel, 80; zygomatic width, 73; intertemporal width, 48; palatal length, 35; breadth of braincase, 64; median length of nasals, 20; length of upper molar series, 25; length of mandible, 29.5; length of lower molar series, 29.

The only difference in the outward appearance between A. ATER and A. PANISCUS, is in the coloring of the face, that of the present species being all black while that of A. PANISCUS is flesh colored.

Wallace states (l. c.) that, "these monkeys are slow in their motions, but make great use of their prehensile tails, by which they swing themselves from bough to bough; and I have been informed that



Ateleus ater.

two have been seen to join together by their hands and prehensile tails to form a bridge for their young ones to pass over. The Indians also say, that this animal generally moves suspended beneath the boughs, not walking on them."

Bartlett, (l. c.) says "the Black-faced Spider Monkey inhabits the forests on the Ucayali, and the Huallaga rivers. It is found over the whole of the valley of the Amazons, generally keeping to the low districts. I shot an adult male at Chamicuros on the Huallaga River, which had the thighs and belly very gray or grizzled. This is the only species of ATELES (!) obtained in large numbers by the Indians, who frequently keep them as pets. These Monkeys travel in bodies of perhaps thirty or forty together. This and the A. VARIEGATUS are, so far as I know, the only Spider Monkeys which are found in the district which I explored."

ATELEUS VARIEGATUS Wagner.

La Chuva de Bracamorros Humb., Rec. Obs. Zool., I, 1811, (1815), p. 48.

Ateles (!) *marginatus* (nec E. Geoff.), Humb., Rec. Obs. Zool., I, 1811, (1815), pp. 340, 354.

Ateles (!) *variegatus* Wagn., Schreb., Säugth. Suppl., I, 1840, p. 313; V, 1855, p. 78; *Id.* Abhandl. Bayer. Akad. Münch., V, 1847, p. 240; Reichenb., Vollständ. Naturg. Affen, 1862, p. 62, pl. X, fig. 154; von Frantz., Archiv. Natur., 1869, Pt. I, p. 257; Sclat., Ann. Mag. Nat. Hist., VI, 4th Ser., 1870, p. 472; *Id.* Proc. Zool. Soc. Lond., 1870, p. 668; 1871, pp. 39, 217, 225; Gray, Ann. Mag. Nat. Hist., VI, 4th Ser., 1870, p. 472; Bartl., Proc. Zool. Soc. Lond., 1871, p. 217; 1884, p. 884; A. Milne-Edw., Archiv. Mus. Hist. Nat., Paris, I, 1878, p. 162; von Pelz., Zool.-Bot. Ges. Wien, 1883, Beiheft, p. 9; Forbes, Handb. Primates, I, 1894, p. 231, pl. XXI.

Ateles (!) *geoffroyi* Slack, Proc. Acad. Nat. Scien. Phil., 1862, p. 511, ♂, (nec Kuhl).

Ateles (!) *bartletti* Gray, Proc. Zool. Soc. Lond., 1867, p. 992, pl. XLVII, ♂; *Id.* Ann. Mag. Nat. Hist., VI, 4th Ser., 1870, p. 428, juv.

Ateles (!) *chuva* Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 175; Anders., Cat. Mamm. Ind. Mus. Calc., 1883, p. 84.

VARIEGATED SPIDER MONKEY.

Type locality. None given.

Geogr. Distr. Chyavetos, Nauta and Elvira, Peruvian Amazons;

Province of Jean de Bracamorros, Peru, (Humboldt) ; Sierra de Cocoi, Upper Rio Negro, (Natterer) ; Upper Cauca River, a southern tributary of the Orinoco, Venezuela, (Gordon) ; Oyapock, (Sclater).

Genl. Char. Hair on head long, directed forward over the forehead; beneath and behind cheeks similar long hairs directed forward; face naked.

Color. Male. Face black; top of head and neck, upper parts, hands, feet, and outer side of arms and legs black; band across forehead rufous, bordered by a narrow black line; whiskers from temples to angle of mouth, white; inner side of arms and legs, and under parts, orange yellow; tail above black, beneath, orange.

Female. Like the male on upper parts, but the white stripe on face is very narrow; many black hairs on the outer side of thighs; inner side of arms, legs below the knees, and entire under parts grayish yellow; under side of tail pale buff yellow.

Measurements. Skull: total length, 124; occipito-nasal length, 108; Hensel, 89; intertemporal width, 52; zygomatic width, 76; palatal length, 32; breadth of braincase, 66; median length of nasals, 17; length of upper molar series, 24; length of mandible, 78; length of lower molar series, 30.

This species was first mentioned by Humboldt, (l. c.) as *Le Chuva de Bracamorros,* and was afterward called by him *Ateles* (!) *marginatus,* a name given by E. Geoffroy St. Hilaire to quite another species. Wagner, (l. c.) bestowed upon the species the name A. VARIEGATUS which it now bears, but Schlegel refused to accept this name and restored that of Humboldt's 'Le Chuva,' a merely local appellation, which Humboldt clearly showed he never intended should be considered a scientific name, by adopting for it afterward, as he supposed, Geoffroy's name as stated above. A. VARIEGATUS is readily recognized by the orange yellow of the under parts, and the rufous band on the forehead. The female has paler under parts than the male, grayish yellow. Slack (l. c.) describes the male of this species as A. GEOFFROYI, quite a different animal, but his female is A. GEOFFROYI.

Mr. E. Bartlett, (l. c.) in his account of this species says, "on my arrival in Peru in 1865, Mr. Hauxwell told me of the existence of a large species of Ateles (!) which he had killed but failed to preserve. He told me that he met with it on the Rio Tigri a small tributary that runs into the Amazon about four miles above the town of Nauta, on the northwestern shore of the Peruvian Amazon. He said that during the fourteen years he had traded he never found this species in any other locality. On my return from the Ucayali, in September 1865, I wished to ascend the Rio Tigri in pursuit of this Monkey, but was obliged to abandon the idea, on account of the prevalence of fever and ague at that season, and, moreover, the Indians were unwilling to join me in so dangerous a country. Having determined to spend a few months in the mountain country, I passed up the Marañon and Huallaga to Yurimaguas, and so on to Xiberos, whence I went to the town of *Chyavetos in the mountains. Having heard that this large Monkey was to be met with in this little known locality, I remained at Chyavetos about two months; and during that time I became well acquainted with the Indians, who informed me that a long armed Ape (called in the Inca language Urcu Maci-suppah or Quillu Maci-suppah), was to be met with at a distance of three or four more days journey. I engaged three active Indians, and started by way of a forest foot road, that had been opened by a Catholic priest, to the town of Moyabamba, as part of his penitence. At the end of three days I reached the highest point of the mountains; here we came across a number of the Monkeys in question—about eight or nine. I shot the male that is now in the British Museum; my Indians brought down another with the poison dart. Having obtained two of them, I felt perfectly satisfied that I had discovered a new species. While, however, I was busily engaged preparing the finest specimen, my Indians had quietly placed the other on the fire; to my great horror and disgust they had singed the hair off, and thus spoiled my second specimen. Of course I was obliged to keep peace for we had not tasted meat for several days before starting from Chyavetos, and this Monkey proved a very dainty dish to us all. I was still in hopes of obtaining more specimens in the Munga-Urcu, or Saucepan Mountain (so called from its peculiar shape,) but in this, after much hard work, I failed.

"These Monkeys appear to go in small parties, passing through the forest at a rapid pace, feeding on different kinds of berries. The berries I found in the mouth and stomach of the male were similar to the gooseberry in external appearance; they have, however, a large stone inside. These stones appear to pass through them, as I found several in the intestines.

"On my return to town I found an Indian who had arrived from Cauhapanas, a small town lying at the foot of the mountains in the Marañon Valley, north west of the town of Chyavetos, who had in his possession a very fine young Spider Monkey, which proved to be

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*Chayavitas.

of this species. It was nearly black, but just showing the light golden hair coming on the under side of the body and tail, some few white hairs on the cheeks, and slight golden crest, sufficient to identify the species. I bought it of the Indian, and managed to bring it alive to Yurimaguas, where it died.

"On my arrival I was informed by some of my old Indians, that they discovered this Monkey during my absence on the Upper Huallaga, (on the south eastern shore). One of the Indians said that he brought three young ones alive, which died soon after his arrival in the town. I here give an idea of the great range this Monkey inhabits, owing to the ease with which a beast that can use his long arms and tail may travel a country of this description. It is found on both sides of the Peruvian Amazon (or Marañon), on both shores of the Huallaga, and in the interior forest near the town of Chamicuros. I was told by some of the oldest Indians that these animals are common in the dense forest on the hills near the latter town, their range running between the Huallaga River and Ucayali River to the head waters of the Huallaga, between the towns of Lamas and Sarayaçu. Here they occupy the interior forest, and appear to be common, according to accounts given me by Indians of that country—as also on the lower spurs of the mountains between the towns of Moyabamba and the Huallaga River.

"Then again on the Rio Tigri, north western shores of the Great Marañon, there is not the slightest doubt that this species is to be found ranging along the lower spurs of the Andes, across Ecuador and Colombia, over the head waters of the Rio Napo, Rio Japuri, and Rio Negro, where Natterer first discovered it."

ATELEUS MARGINATUS E. Geoffroy.

Ateles (!) *marginatus* E. Geoff., Ann. Mus. Hist. Nat. Paris, XIII, 1809, p. 92, pl. X; XIX, 1812, p. 106; *Id.* Cours Hist. Nat. Mamm., 1828, p. 30, 9me Leçon; Kuhl, Beitr. Zool., 1820, p. 24; F. Cuv., Hist. Nat. Mamm., 1830, Liv. LXII, 2nd ed.; 1833, p. 154, pl. LV; Less., Spec. Mamm., 1840, p. 129; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 198; V, 1855, p. 77; I. Geoff., Cat. Primates, 1851, p. 49; Slack, Proc. Acad. Nat. Scien. Phil., 1862, p. 512; Reichenb., Vollständ. Naturg. Affen, 1862, p. 62, fig. 153; Bates, Nat. Riv. Amaz., II, 1863, p. 119; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 43; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 174; Forbes, Handb. Primates, I, 1894, p. 239.

Ateles (!) *frontatis* Bennett, Proc. Zool. Soc. Lond., 1831, p. 38.
Ateles (!) *albifrons* Schinz, Syn. Mamm., I, 1844, p. 63.

WHITE-WHISKERED SPIDER MONKEY.

Type locality. "Para, banks of the Orinoco," Brazil. Type in Paris Museum.

Geogr. Distr. Para; vicinity of Cameta on the banks of the Tocantins, (Sieber); banks of the Cupari, a branch of the Tapajos, (Bates); Peru, (Tschudi).

Color. Forehead, crown and whiskers, white, all the rest of the body, limbs, hands, feet and tail jet black; under parts black; face black except around the eyes which is flesh color. Ex type in Paris Museum.

Measurements. Skull: total length, 112; occipito-nasal length, 98; zygomatic width, 66; intertemporal width, 50; palatal length, 32; breadth of braincase, 61; median length of nasals, 14; length of upper molar series, 23; length of mandible, 70; length of lower molar series, 27.

The type of this species was procured by the Paris Museum from the "Cabinet de Lisbonne" in 1808. It is not a fully grown animal, and the white on the forehead and whiskers is not very distinct as yet, for black hairs are mixed with it.

Adult male in Leyden Museum has no white on the crown only on forehead.

Bates while staying at the site of João Aracú on the Rio Tapajos, met with this Monkey. He says, (l. c.) "the most interesting acquisition on the place was a large and handsome monkey. I had not before met with the white-whiskered Coaita, or Spider Monkey, Ateles marginatus. I saw a pair one day in the forest moving slowly along the branches of a lofty tree, and shot one of them; the next day José Aracú, brought down another, possibly the companion. The species is of about the same size as the common black kind of which I have given an account in a former chapter. * * * It is never met with in the alluvial plains of the Amazons, nor I believe, on the northern side of the great river valley, except towards the head waters, near the Andes, where Humboldt discovered it on the banks of the Santiago. I thought the meat the best flavored I ever tasted. It resembled beef, but had a richer and sweeter taste. During our stay in this part of the Cupari, we could get scarcely anything but fish to eat, and as this diet ill agreed with me, three successive days reducing me to a state of great weakness, I was obliged to make the most of our Coaita meat. We smoke-dried the joints instead of salting them;

placing them for several hours on a framework of sticks arranged over a fire, a plan adopted by the natives to preserve fish when they have no salt, and which they call 'Muquiar.' My monkeys lasted me about a fortnight, the last joint being an arm with the clenched fist, which I used with great economy, hanging it in the intervals between my frugal meals on a nail in the cabin."

ATELEUS RUFIVENTRIS Sclater.

Ateles (!) *vellerosus* Sclat., Proc. Zool. Soc. Lond., 1871, p. 478, (nec Gray).

Ateles (!) *rufiventris* Sclat., Proc. Zool. Soc. Lond., 1872, p. 688, pl. LVII; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 182; Alston, Biol. Centr. Amer., I, Mamm., 1879, p. 8; Forbes, Handb. Primates, I, 1894, p. 236; Elliot, Mamm. Middle Amer. and W. Indies, F. C. M. Pub., IV, Pt. II, 1904, p. 734, Zool. Ser.; *Id.* Check-L. Mamm. N. Amer. Cont. and W. Indies, F. C. M. Pub., VI, 1905, p. 535, Zool. Ser.

FULVOUS-BELLIED SPIDER MONKEY.

Type locality. River Atrato, Colombia. Type in British Museum.

Geogr. Distr. Panama? into Colombia, South America.

Genl. Char. Fur coarse, hairs long, those on forehead and on top of head directed backward; thumb absent.

Color. Black line from inner corners of eyes and side of nose to cheeks, rest of face flesh color, under parts extending a short distance on inner side of arms and legs, bright rufous; all the rest of head, body, limbs, hands, feet and tail black. The line between the color of the under parts and black of the body is sharply drawn, and does not grade over into the other at any place. Ex type British Museum.

Measurements. The type is that of an immature animal hardly half grown, and no skull seems to have been preserved.

The evidence of this animal occurring in Panama, rests solely on a specimen in the Leyden Museum, stated to have been "tué en Panama." This is hardly satisfactory, as there seems to be an authority wanting for this locality, and its appearance therefore in Central America can only be regarded as doubtful.

The type was obtained on the Rio Atrato and was a young individual, which was captured alive, and sold to the Zoological Society of London.

Ateleus grisescens Gray.

Ateles (!) *grisescens* Gray, Proc. Zool. Soc. Lond., 1865, p. 732; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 42; Sclat., Proc. Zool. Soc. Lond., 1871, p. 223; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 173; Forbes, Handb. Primates, I, 1894, p. 242; Elliot, Mamm. Middle Amer. and W. Indies, F. C. M. Pub., IV, Pt. II, 1904, p. 734, Zool. Ser.; *Id.* Check-L. Mamm. N. Amer. Cont. and W. Indies, F. C. M. Pub., VI, 1905, p. 535, Zool. Ser.

GRIZZLED SPIDER MONKEY.

Type locality. Unknown. Type in British Museum.

Geogr. Distr. Central America?

Color. Entirely black except the under side of the tail which is tinted with yellowish brown, the basal portion of the hairs being of that color, as is also the basal part of the hairs on arms and legs. Intermixed with the black hairs are long gray, or silvery, or golden hairs, not sufficiently numerous to give a tint to the black color, this being produced only where the basal part of the hairs are yellow or golden, which is most apparent on the limbs, shoulders and lower part of the back. Head, black mixed with golden brown hairs, these directed forward, except those on forehead which stand upright; hands, feet, and tail above black with golden brown hairs intermingled. No skull. Ex type British Museum.

The type specimen has the appearance of a black monkey, with a moderate number of golden brown and silvery hairs intermingled. In some lights these are hardly perceptible, but in strong lights they are conspicuous. It is a rather small animal about the size of A. CUCULLATUS. It certainly is a peculiar looking example, but its real claim to specific distinctness can only be satisfactorily proved by the acquisition of more specimens. It is nearest in its state of coloration to A. CUCULLATUS and it is possible they may eventually prove to be the same, but placed side by side this example is much blacker. Dr. Sclater, writing about this animal in 1871 (l. c.) says "Dr. Gray founded this species of ATELES (!) upon a specimen that was living in our Gardens in 1864. It was brought home by Mr. E. Greey, F. Z. S. (who was at that time an officer in the West Indian Mail Company's Steamship Shannon-, on the 29th Oct., 1864). Referring to Mr. Greey's letters, I regret to find that he did not know the exact locality of it, but only states that it was obtained by him at St. Thomas's, and had already been three years in captivity, so that it was quite adult.

"In 1889 (Oct. 12) we purchased of a London dealer a somewhat similar specimen, which died twenty-six days afterwards. It was a young half grown male. I have compared its skin with the typical specimen of A. GRISCESCENS, now in the British Museum, and believe them to be probably identical. The young animal is, as might be expected, rather lighter in color, particularly below, but above exhibits the same mixture of black and grayish hairs as in the original. The tail is nearly black above, with a light line of grayish hairs below. The length of the body is fourteen inches, of the tail sixteen inches. There is no rudiment of a thumb apparent.

"It is possible this may be a good species, and still turn up in some part of the Central American or Colombian Coast, whence Mr. Greey's specimen probably came, but I do not yet consider it sufficiently well established."

This specimen, described by Dr. Sclater, I found in the Collection of the Paris Museum.

A skull in the Paris Museum stated to have been obtained from the Zoological Society of London bears upon it the name "ATELES (!) CINERASCENS." This is evidently an error as there is no Spider Monkey with that appellation. It was most probable that *grisescens* was the word intended to have been written, and it doubtless belonged to Sclater's example. The dimensions of this skull are as follows: total length, 119; occipito-nasal length, 99; Hensel, 69; zygomatic width, 62; intertemporal width, 47.5; breadth of braincase, 59; median length of nasals, 17; length of upper molar series, 25; length of mandible, 62; length of lower molar series, 29.

As the type of A. CUCULLATUS was without a skull, no comparison between it and the one from which the measurements given above were taken, could be made.

ATELEUS CUCULLATUS Gray.

Ateles (!) *cucullatus* Gray, Proc. Zool. Soc. Lond., 1865, p. 733; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 43; Murie, Proc. Zool. Soc. Lond., 1865, p. 739; Sclat., Proc. Zool. Soc. Lond., 1871, p. 223, pl. XIV; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 169; Forbes, Handb. Primates, I, 1894, p. 243.

HOODED SPIDER MONKEY.

Type locality. Unknown. Type in British Museum.

Geogr. Distr. Colombia?

Color. Face bare; around eyes and about nose flesh color, with darker freckles intermixed; cheeks and lower jaw black. Ex living animal. Head and neck black, the hairs very long and projecting over the forehead; rest of body above and beneath, limbs and tail black mixed with yellowish gray or golden hairs, so numerous on the back as to give the prevailing color to that part—a pale yellowish brown; the limbs have the base of the hairs a similar yellowish brown or golden hue, (not far removed from the color on the base of the hairs in similar parts of A. GRISESCENS), and this gives a strong yellowish tint to these members; hands and feet black, base of hairs on hands golden, but not on those of the feet which are black to the roots. Ex type British Museum.

Measurements. Total length, about 1,021; tail, 698.5. No skull. The following measurements were taken from the body of this type specimen immediately after its death, by Dr. Murie.

Body.	Length from vertex of cranium to root of tail	14½	inches.
	Length of tail	27½	inches.
	Girth at chest, widest part	11	inches.
	Girth at abdomen	9	inches.
	Girth of tail at root	4	inches.
	Girth of tail a few inches from point	2	inches.
Head.	Depth from vertex to base of lower jaw (barely)	3	inches.
	Antero-posterior diameter	4½	inches.
	Breadth of vault at opening of ears	6	inches.
	Breadth from one to the other external edges of orbits	2¼	inches.
Fore limb.	Length of shoulder to elbow-joint	6½	inches.
	Cubital region, elbow-joint to wrist	7	inches.
	Length, palm of hand to tips of fingers	4¾	inches.
	Greatest breadth, palm of hand	1¼	inches.
Hind limb.	Length from hip to knee-joint	6¼	inches.
	Length, knee to sole of foot	6½	inches.
	Length, sole of foot, heel to tip of middle toe	6¼	inches.
	Sole of foot, average breadth	1¼	inches.
	Sole, greatest breadth at ball of great toe	2	inches.

ATELEUS BELZEBUTH E. Geoffroy.

Ateles (!) *belzebuth* E. Geoff., Ann. Mus. Hist. Nat. Paris, VII, 1806, p. 272, pls. XVI, XIX; 1812, p. 106; *Id.* Cours Hist. Nat. Mamm., 1828, p. 30, 9me Leçon; Kuhl, Beitr. Zool., 1820, p. 24; Desm., Mamm., 1820, p. 74; F. Cuv., Hist. Nat. Mamm., 2me ed., 1833, p. 158, pl. LVII; Blainv., Ostéog., 1841, Atl., Cebus, pl. I; Less., Spec. Mamm., 1840, p. 132; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 199; V, 1855, p. 78, pl. XXVI; I. Geoff., Cat. Primates, 1851, p. 49; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 171, 172; Reichenb., Vollständ. Naturg. Affen, 1862, p. 62, figs. 149, 152; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 44; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 176.

La Marimonda Humb., Rec. Obs. Zool., I, 1811, (1815), p. 325.

Simia belzebuth Humb., Rec. Obs. Zool., I, 1811, (1815), p. 353.

Ateles (!) *fuliginosus* Kuhl, Beitr. Zool., 1820, p. 26; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 179, (Part.).

Cebus fuliginosus Fisch., Syn. Mamm., 1829, p. 40.

Cebus brissonii Fisch., Syn. Mamm., 1829, p. 40.

Ateles (!) *vellerosus* Gray, Proc. Zool. Soc. Lond., 1865, p. 733; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 44.

MEXICAN SPIDER MONKEY.

Type locality. Banks of the Orinoco. Neither Geoffroy's type nor Kuhl's type is in the Paris Museum. Gray's type of *vellerosus* is in the British Museum.

Geogr. Distr. South America on the banks of the Orinoco, above the great rapids of Atures and Maypures, (Humboldt).

Genl. Char. Hair long, soft, falling over sides like a mantle.

Color. Head, outer side of arms, legs from above knees to ankles, hands, feet, and upper side of tail black; upper part of back and rump, blackish chestnut; lower back golden; sides deep orange or tawny; whiskers, throat, inner side of limbs, grayish yellow; under side of tail yellowish brown. Sometimes the lower back and sides are pale brownish yellow; under parts cream color. Ex type of *A. vellerosus* in British Museum.

Measurements. Skull: total length, 111; occipito-nasal length, 95; Hensel, 74; intertemporal width, 49; palatal length, 33; zygomatic width, 72; breadth of braincase, 57; median length of nasals, 16; length of upper molar series, 24; length of mandible, 71; length of lower molar series, 29.

Neither the type of A. BELZEBUTH, nor that of *A. fuliginosus* is now in the Paris Museum. The earliest specimen of A. BELZEBUTH is dated 1836, and the animal died in the Menagerie; the next is 1840, from "Amérique Méridionale" and was given by M. Bernard, Departement de la Marine. Both these examples have a general dark brown pelage, with more of the golden hue on the lower back on the earlier example, although the one given in 1840, has the tips of the hairs golden as if a change to that color had commenced.

They are in the pelage which might well be designated as *fuliginosus,* but which Geoffroy called BELZEBUTH, and both are so labelled; while one obtained in 1894, from Acapulco, Mexico, which is doubtless an immature A. PAN Schlegel, is called *A. fuliginosus* Kuhl, as stated on the label. *A. vellerosus* Gray, the *fuliginosus* style, would seem to be the earlier pelage before the brighter coloring of the mature animal had appeared. As Geoffroy's name of BELZEBUTH was given to the species fourteen years before Kuhl named it, *fuliginosus* must become a synonym.

Judging from the descriptions, both Geoffroy's and Kuhl's specimens were immature, and had little of the golden color on the back so characteristic of the adult. Considerable confusion has arisen by writers attempting to connect this South American species with the Spider Monkey from Mexico. Gray's type was said to have come from Brazil, but there were no proofs to confirm this. The type of BELZEBUTH, as stated by Geoffroy, came from the banks of the Orinoco above the great rapids of that river. At Atures and Maypures Humboldt saw it, (l. c.). The Mexican species of ATELEUS is distinct, and Schlegel has given to it the name, A. PAN.

ATELEUS PAN Schlegel.

Ateles (!) *pan* Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 180; Allen, Bull. Amer. Mus. Nat. Hist., 1904, p. 40.

Ateles (!) *vellerosus* (nec Gray), Sclat., Proc. Zool. Soc. Lond., 1872, pp. 5, 798; Reinh., Proc. Zool. Soc. Lond., 1872, p. 797; Alston, Biol. Centr. Amer., I, Mamm., 1879, p. 10; Thos., Proc. Zool. Soc. Lond., 1890, p. 72; Forbes, Handb. Primates, I, 1894, p. 244; Elliot, Mamm. Middle Amer. and West Indies, Field Columb. Mus. Pub., IV, Pt. II, 1904, p. 733, fig. CXLI, pl. LXVIII, Zool. Ser.; *Id.* Cat. Mamm. Field Columb. Mus., VI, 1905, p. 559, Zool. Ser.

SCHLEGEL'S SPIDER MONKEY.

Type locality. Coban, Vera Paz, Guatemala. Type in Leyden Museum.

Geogr. Distr. Volcano of Orizaba, State of Vera Cruz, into Guatemala.

Genl. Char. Similar to A. BELZEBUTH, but the yellowish white on inner side of arms and legs very restricted; no white on the cheeks.

Color. Face black; head, shoulders, arms, hands, legs and feet, black or blackish brown; rump brown, hairs tipped with shining golden; under parts yellow; reddish line on border of flanks; inner side of arms to elbows, and legs to ankles yellowish white; tail brownish black. Ex type Leyden Museum.

Measurements. Total length, 1,120; tail, 700; foot, 150. Skull: total length, 1,022; interorbital width, 57.1; occipito-nasal length, 99.3; Hensel, 66; zygomatic width, 63.5; median length of nasals, 15.4; palatal length, 27.6; length of upper molar series, 24.3; length of mandible, 60; length of lower molar series, 27.1. Ex type Leyden Museum.

The type specimen has the hair on the head radiating from point on occiput and projecting in front over the face. There is a strong reddish brown tint over all the back in certain lights, and also on the tail, but less strong. The light stripe on inner side of arms goes to elbows.

This species is found in Mexico and Guatemala, and in the latter country quite across from sea to sea. Mr. Salvin met with it in Guatemala during his visits there. Once he came near a troop of these monkeys on the summit of a ridge of mountains which connects the Volcan de Fuego with the main cordillera, at an elevation of about 8,300 feet above the sea.

"Indians always spoke of Monkeys (doubtless of this species) being found in these upland forests." Alston (l. c.) states that "during Mr. Salvin's last visit to Guatemala (in 1873-74) he met with *A. vellerosus,* (A. PAN), in numbers in the forests of the Volcano of Atitlan. On the 22nd of January, 1874, he made an expedition from the village of San Augustin with the object of ascertaining the most practicable part to attempt the ascent of the mountain. On this occasion he ascended to a height of 6,000 feet, and during the last 1,000 feet or so, saw several troops of *Ateles* in the tops of the higher trees in the forest. One of these, the specimen in the British Museum, he shot. These parties of Monkeys were usually about twenty in number and of all ages. On approaching them they did not evince any alarm, but kept uttering a constant querulous sort of bark, and moved from time to time so as to get a better view of the intruder. A few days afterwards, during an excursion to the same volcano, when the summit, 11,800 feet above the sea was reached, numerous troops of *Ateles* were seen in the forest from an elevation of 7,000 feet to as low as 2,500 feet, on the outskirts of the coffee plantations of San Augustin. So far as Mr. Salvin could see with his glass, these Monkeys showed no variation in color, being dark above and light beneath; but the trees in which they were found were very lofty, and the foliage so dense as to make it difficult to observe them accurately."

At Mirador, near Mount Orizaba, State of Vera Cruz, Professor Liebmann found this species common, going in small troops in the deep ravines up to an elevation of 2,000 feet. In eastern Oaxaca he also found it at a height of 4,000 feet. He believed it does not go on the Pacific slope of the mountains nor farther north than Tehuantepec.

ATELEUS FUSCICEPS Gray.

Ateles (!) *fusciceps* Gray, Proc. Zool. Soc. Lond., 1865, p. 733; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 42; Sclat., Proc. Zool. Soc. Lond., 1872, p. 663, pl. LV; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 173; Forbes, Handb. Primates, I, 1894, p. 242.

BROWN-HEADED SPIDER MONKEY.

Type locality. Unknown. Type in British Museum.

Geogr. Distr. Trans-Andean Ecuador. Range unknown.

Genl. Char. Thumb absent.

Color. Top of head yellowish wood brown darkening to a line of mummy brown above the forehead; upper parts and limbs black tinged with burnt umber brown, the tips of the hairs being of that color; hands, feet and tail, black; under parts blackish brown. Ex type British Museum.

Measurements. Skull: total length, 114; occipito-nasal length, 102; zygomatic width, 71; intertemporal width, 52; palatal length, 33; breadth of braincase, 62; median length of nasals, 21; length of upper molar series, 24; length of mandible, 72; length of lower molar series, 29. Ex type British Museum.

The type of this species, a skin in the Collection of the British Museum, was obtained from the Zoological Society, the animal having been received alive, patria unknown, and died in the gardens. Subsequently other specimens were procured by Mr. Buckley in Ecuador, locality not given. It is apparently quite a distinct form, the peculiar coloring of the top of the head making it easily recognizable.

ATELEUS GEOFFROYI Kuhl.

Ateles (!) *geoffroyi* Kuhl, Beitr. Zool., 1820, p. 26; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 40; V, 1855, p. 200, pl. XXVI E; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 181; Alston, Biol. Centr. Amer., I, Mamm., 1879, p. 8; Anders., Cat. Mamm. Ind. Mus. Calc., 1881, p. 83; Forbes, Handb. Primates, I, 1894, p. 233; Allen, Bull. Amer. Mus. Nat. Hist., 1904, p. 5; Elliot, Mamm. Middle Amer. and W. Indies, Field Columb. Mus. Pub., IV, Pt. II, 1904, p. 733, Zool. Ser.; *Id.* Check-L. Mamm., N. Amer. Cont. and W. Ind., Field Columb. Mus. Pub., VI, 1905, p. 535, Zool. Ser.

Ateles (!) *melanochir* Desm., Mamm., 1820, p. 76; Less., Spec. Mamm., 1840, p. 133; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 200; V, 1855, p. 78; I. Geoff., Cat. Primates, 1851, p. 49; Dahlb., Stud. Zool. Reg. Fam. Anim. Natur., fasc. I, 1856, pp. 171, 172; Reichenb., Vollständ. Naturg. Affen, 1862, p. 62, fig. 155; Sclat., Proc. Zool. Soc. Lond., 1870, p. 797; 1871, p. 226, pl. XV; 1875, p. 419, pls. XLVIII, XLIX; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 43.

Eriodes frontatus Gray, Ann. Mag. Nat. Hist., 1842, p. 256; *Id.* Voy. Sulphur, Zool., p. 9, pl. I; Frantz., Wiegm., Archiv., XXXV, 1869, p. 257; Sclat., Proc. Zool. Soc. Lond., 1882, p. 186; Reichenb., Vollständ. Naturg. Affen, 1862, p. 57, figs. 138, 139.

Sapajou geoffroyi Slack, Proc. Acad. Nat. Scien. Phila., 1862, p. 511, ♀. (nec ♂).

Ateles (!) *melanochir var. frontatus* Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 44.

Ateles (!) *albifrons* Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 44.

Ateles (!) *ornatus* Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 44.

Large Yellowish Brown Spider Monkey Belt, Nat. Nicarag., 1874, p. 117.

GEOFFROY'S SPIDER MONKEY.

Type locality. Unknown. Type in Paris Museum.

Geogr. Distr. Nicaragua, Central America to Colombia, South America. Pozo Azul, Central Costa Rica, (Allen).

Genl. Char. Thumb absent.

Color. This species varies greatly and has been described under various names. Top of head and upper part of tail buff; a patch of erect hairs on forehead black; ring around eyes and lips flesh color, rest of face black; upper and lower parts of body light grayish drab; hands, elbows, feet, knees, and apical portion of tail above black. Ex type in Paris Museum.

This is also the *A. melanochir* style described by Desmarest from the same specimen that served Kuhl for his type of A. GEOFFROYI. *A. ornatus* Gray, has the face black, the base of hairs on head yellowish, on forehead and nape all black or brownish black; whiskers pale reddish yellow, upper part of back and shoulders Vandyke brown, hairs tipped with golden; rest of back, flanks, inner side of arms above elbows, and inner side of thighs and base of tail beneath, brownish red; under parts reddish, rest of arms, outer side of legs, hands, feet and upper parts of thighs, and tail above black. This description is from Gray's type in the British Museum.

Between this style and the typical one all kinds of gradations are found, some of the most extreme character, such as grayish drab upper parts, or a cream color on the under parts. Specimens of *A. ornatus* in the British Museum vary considerably from the type, being much lighter above the shoulders where they are yellowish brown, and in no place does the red color attain the depth exhibited in the type. Other specimens have the upper part of back dark brown, grading into a yellowish brown on lowest back and sides, and under parts yellowish gray. The type of *A. albifrons* Gray has a yellowish white line on the forehead continued by a few straggling hairs on sides of face to mouth; upper parts dark brown grading into drab and whitish brown on rump, yellowish gray beneath; tail dark brown like upper part of back; a variation of the *A. melanochir* or typical A. GEOFFROYI style. The type of *A. albifrons* is stated on the ticket as from Medillen, and a specimen from Bogota is almost exactly like it but has no white on the forehead. The extreme of the different coloring among individual specimens if considered by themselves might be readily regarded as indicating distinct forms, but a series of examples soon disposes of any such view, and they can only be considered as representing the changeable styles of coloration exhibited by a species subject to extreme variations.

Measurements. Skull: total length, 117; occipito-nasal length, 103; Hensel, 79; zygomatic width, 76; intertemporal width, 51; palatal length, 33; breadth of braincase, 64; median length of nasals, 21;

length of upper molar series, 25; length of mandible, 77; length of lower molar series, 29. Vertebræ: Cervical, 7; Dorsal, 14; Lumbar, 4; Sacral, 3; Caudal, 31.

Mr. Salvin during a short stop at San Juan del Sur, Nicaragua, met with several Monkeys, probably of this species, as related by Alston (l. c.) when strolling in the neighborhood of the town. He was walking up the course of a half dry stream, when a troop of Monkeys came to a pool to drink, and were climbing about the low trees on the bank of the water course. Most of the troop consisted of *Cebus hypoleucus* (C. CAPUCINUS Linn.), but with them were several ATELES (!) of one of which Mr. Salvin wrote this description: "The whole body has a light grayish drab all over, except the hands, elbows, knees and feet which were black; the face was black, with the exception of the flesh colored mouth; the upper part of the tail was slightly tinged with buff, as was also the top of the head. On the middle of the forehead was a small triangular patch of erect black hairs." There were several others just like the specimen described. These animals were evidently of the form described as *A. melanochir*. It was not unusual Mr. Salvin states, to see occasionally this Monkey kept in confinement in Guatemala, but, on inquiry, he always found they had been brought from Nicaragua or Costa Rica.

Belt, in his "Naturalist in Nicarauga" speaks of meeting a "large yellowish brown Spider Monkey which roams over the tops of the trees in bands of from ten to twenty. Sometimes they lay quiet until I was passing underneath, when, shaking a branch of the Nispera tree, they would send down a shower of the hard round fruit, but never throwing anything, simply letting it fall. Often, when on lower trees, they would hang from the branches two or three together, holding on to each other and to the branch with their fore feet and long tail, whilst their hind feet hung down, all the time making threatening gestures and cries.

"Sometimes a female would be seen carrying a young one on its back to which it clung with legs and tail, the mother making its way among the branches and leaping from tree to tree, apparently but little encumbered with its baby. A large black and white eagle is said to prey upon them, but I never saw one, although I was constantly falling in with troops of monkeys. Don Francisco Velasquez, one of our officers, told me that one day he heard a monkey crying out in the forest for more than two hours, and at last going to see what was the matter he saw a monkey on a branch, and an eagle beside it trying to frighten it to turn its back, when it would have seized it. The monkey, however, kept its face to the foe, and the eagle did not care to engage with it in this position, but probably would have tired it out. Velasquez fired at the eagle, and frightened it away. I think it likely, from what I have seen of the habits of this monkey, that they defend themselves from its attack by keeping two or three together, thus assisting each other, and it is only when the eagle finds one separated from its companions that it dares to attack it."

Ateleus hybridus I. Geoffroy.

Ateles (!) *hybridus* I. Geoff., Mém. Mus. Hist Nat., Paris, XVII, 1829, p. 168; *Id.* Études Zool., 1832, p. 1, pl. I; *Id.* Mag. Zool., 1832, p. 1, pl. I; *Id.* Cat. Primates, 1851, p. 49; Less., Spec. Mamm., 1840, p. 129; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 201; V, 1855, p. 79; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 171, 172; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 183.

Sapajou marginatus Slack, Proc. Acad. Nat. Scien. Phil., 1862, p. 512.

Eriodes hybridus Reichenb., Vollständ. Naturg. Affen, 1862, p. 57, figs. 136, 137.

HYBRID SPIDER MONKEY.

Type locality. Valley of the Magdalena, Colombia. Type in Paris Museum.

Geogr. Distr. Valley of the Magdalena, Colombia.

Genl. Char. Triangular white mark on forehead.

Color. Face black, white triangular spot on the forehead, the lower point reaching each eye; top and sides of head and nape blackish brown; shoulders, arms, legs, hands and feet also blackish brown, but not quite so dark as the head; upper parts of body pale or ashy brown; under parts of body and inner side of limbs grayish white; tail blackish brown same color as outer side of limbs.

Measurements. Skull: total length, 109; occipito-nasal length, 92; Hensel, 75; zygomatic width, 65; palatal length, 51; breadth of braincase, 59; median length of nasals, 15; length of upper molar series, 23; length of mandible, 70; length of lower molar series, 29. Paris Museum, possibly the type, as it bears the date, 1820, procured by M. Plée.

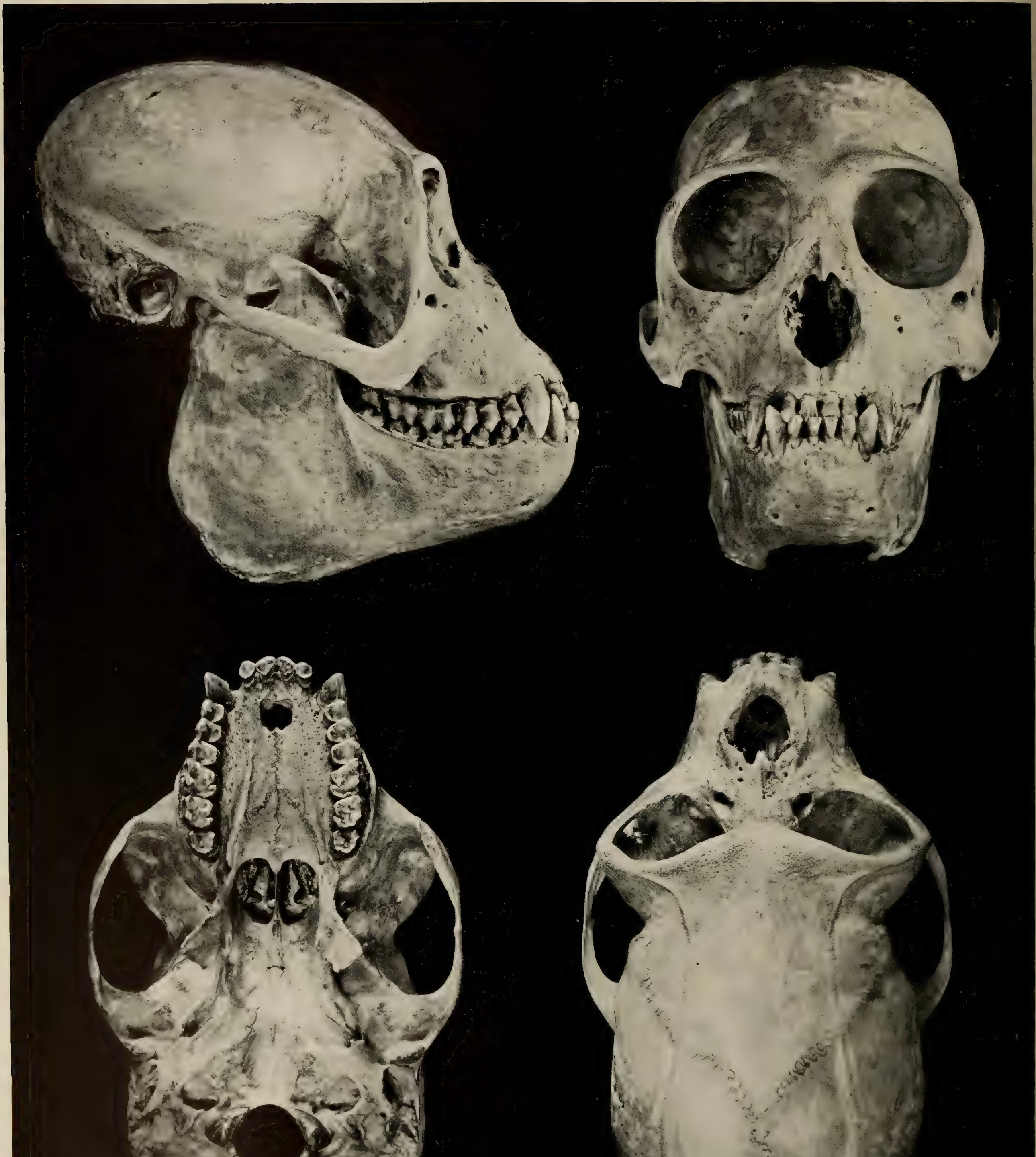
The above description was taken from an example presented to the Paris Museum by M. Baron and stated to have come from Colombia. Several specimens are in the collection, and it does not seem that they can be referred to any known species, and must be recognized as distinct. It is a plain light brown animal, with dark head, limbs, and tail, and whitish under parts.

The specimen marked on ticket, 'type' was presented by M. Plée and said to have come from Colombia. It is much faded, mummy brown on head, arms, and shoulders, with a white spot in the center of the forehead; forearms, upper parts of body, flanks, legs and tail yellowish brown; hands and feet blackish brown.

Measurements. Total length, 1,346.40; tail, 163.85; foot, 177.80.

Another specimen, better in color, has the head, shoulders, arms, hands, feet and tail blackish brown, darker than seal brown; white triangular spot on forehead; upper part of body and flanks Prout's brown; legs Prout's brown nearly on front edge over knee; inner side of limbs and under parts of body, grayish white; tail above, blackish brown like arms, beneath, yellowish.

Exposure to light has changed this specimen somewhat, as one of the legs is paler than the other, and possibly the back and sides may have changed also, but the head, arms, hands, feet and tail doubtless still retain the original color. As the description shows, it is a very much darker animal than the one marked as the 'type,' and it does not seem likely that the latter ever was as dark, which gives rise to the suspicion that there may be a considerable variation in color among members of this form. All the specimens have a triangular white spot on the forehead, the lower points reaching, as stated by Geoffroy, to the corners of the eyes. If this is a hybrid, as its name would seem to imply, it is extremely difficult to determine what species have produced it.



BRACHYTELEUS ARACHNOIDES.

No. 3.9.4.4. Brit. Mus. Coll. 4/5 Nat. Size.

GENUS *BRACHYTELEUS. WOOLLY SPIDER MONKEYS.

$$\text{I. } \frac{2-2}{2-2};\quad \text{C. } \frac{1-1}{1-1};\quad \text{P. } \frac{3-3}{3-3};\quad \text{M. } \frac{3-3}{3-3} = 36.$$

BRACHYTELES (!) Spix, Sim. et Vespert. Bras., 1823, p. 36, pl. XXVII. Type *Brachyteles* (!) *macrotarsus* Spix, = *Ateles* (!) ARACHNOIDES E. Geoffroy.

Eriodes I. Geoff., Mém. Mus. Hist. Nat., Paris, XVII, 1829, p. 160.

Head round; body heavy; limbs long, slender; fur woolly; face flat; septum of nose narrow; nostrils circular, approximate, directed downwards; thumb rudimentary or wanting; nails sharp, compressed; tail longer than body, naked beneath, prehensile. Skull has a rounded braincase; incisors of equal size; canines small, of same length as the incisors, while the molars, which are square shaped and heavy, are higher than the canines.

The fur of this species is woolly in texture and not brightly colored, while the face is naked and often a brilliant red, the color being intensified when the animal is excited. The arms are long and slender, and the hand is without a thumb or with merely a rudiment of one. The tail is long, naked on the under side at the tip, and prehensile. The nails of the hands and feet are compressed and acute.

LITERATURE OF THE SPECIES.

1806. *E. Geoffroy Saint-Hilaire, in Annales du Muséum d'Histoire Naturelle, Paris.*
In a paper upon the species of ATELES (!) BRACHYTELEUS ARACHNOIDES is first described as *Ateles* (!) *arachnoides*.

1820. *Kuhl, Beiträge zur Zoologie und vergleichenden Anatomie.*
Among the species of ATELEUS here given, two of the genus BRACHYTELEUS are included as *Ateles* (!) ARACHNOIDES, specimen without a thumb, and *A. hypoxanthus*, example with a thumb = BRACHYTELEUS ARACHNOIDES.

1823. *Spix, Simiarum et Vespertilionum Brasiliensium, Species Novæ.*

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*Βραχύς short, and τελος,εως end = Brachyteleus nec *Brachyteles*. See I. Geoffroy, Cat. Primates, p. 51.

The genus BRACHYTELEUS was here first established, and B. ARACHNOIDES was redescribed as *Brachyteles* (!) *macrotarsus.*

1829. *I. Geoffroy Saint-Hilaire, in Mémoires du Muséum d'Histoire Naturelle, Paris.*
Under his genus *Eriodes* = BRACHYTELEUS three species are named. (*E.*) ARACHNOIDES; (*E.*) *tuberifer,* and (*E.*) *hemidactylus,* the last two = B. ARACHNOIDES. *E. hemidactylus* was simply another name proposed for *hypoxanthus* because as the Author supposed, it had been given to two species, he believing that the presence or absence of the thumb constituted a specific character.

1870. *Gray, Catalogue of Monkeys, Lemurs and Fruit-eating Bats, in the Collection of the British Museum.*
In this List the individual here called a variety without a thumb, is named BRACHYTELES (!) ARACHNOIDES, and the variety with a rudimentary thumb *B. hypoxanthus.* Only one species, however is recognized, B. ARACHNOIDES.

1876. *Schlegel, Muséum d'Histoire des Pays-Bas, Simiæ.*
The single species of BRACHYTELEUS is here placed under ATELES (!) and is divided into two according to the presence or absence of the thumb, as (*A.*) ARACHNOIDES, and (*A.*) *hypoxanthus* = B. ARACHNOIDES.

BRACHYTELEUS ARACHNOIDES (E. Geoffroy).

Ateles (!) *arachnoides* E. Geoff., Ann. Mus. Hist. Nat. Paris, VII, 1806, p. 271; XIII, 1809, p. 90, pl. IX; XIX, p. 106; *Id.* Cours Hist. Nat. Mamm., 1828, p. 30, 9me Leçon; Kuhl, Beitr. Zool., 1820, p. 25; Desm., Mamm., 1820, p. 72; Reichenb., Vollständ. Naturg. Affen, 1862, p. 57, fig. 140; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 184.

Ateles (!) *hypoxanthus* Kuhl, Beitr. Zool., 1820, p. 25; Desm., Mamm., 1820, p. 72; E. Geoff., Cours Hist. Nat. Mus., 1828, p. 30, 9me Leçon; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 202; V, 1865, p. 79; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 184.

Brachyteles (!) *macrotarsus* Spix, Simiar. et Vespert. Bras., 1823, p. 36, pl. XXVII.

Eriodes hemidactylus E. Geoff., Mém. Mus. Hist. Nat., Paris, XVII, 1829, p. 163; Less., Spec. Mamm., 1840, p. 135; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, p. 135; Reichenb., Vollständ. Naturg. Affen, 1862, p. 58, fig. 145.

Eriodes tuberifer E. Geoff., Mém. Mus. Hist. Nat., Paris, XVII, 1829, p. 163; Less., Spec. Mamm., 1840, p. 135; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, p. 135; Reichenb., Vollständ. Naturg. Affen, 1862, p. 57, figs. 41, 42.

Eriodes arachnoides E. Geoff., Mém. Mus. Hist. Nat., Paris, XVII, 1828, p. 160; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 204, pl. XXVI D; V, 1855, p. 80; Less., Spec. Mamm., 1840, p. 136; Blainv., Ostéog., 1840, Atl., Cebus, pl. V; I. Geoff., Cat. Primates, 1851, p. 51; Reichenb., Vollständ. Naturg. Affen, 1862, p. 57, fig. 140; von Pelz., Bras. Säugeth., 1883, p. 8.

Cebus hypoxanthus Fisch., Syn. Mamm., 1829, p. 38.

Cebus arachnoides Fisch., Syn. Mamm., 1829, p. 38.

Brachyteles (!) *arachnoides* Gray, List Spec. Mamm. Brit. Mus., 1843, p. 10; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 45; Forbes, Handb. Primates, I, 1894, p. 226.

BROWN WOOLLY SPIDER MONKEY.

Type locality. "le Brésil." Type in Paris Museum.

Geogr. Distr. South eastern Brazil. Cape St. Roque to Rio de Janeiro.

Genl. Char. Size large; face naked; thumb rudimentary or absent; hairs of head short, directed backward.

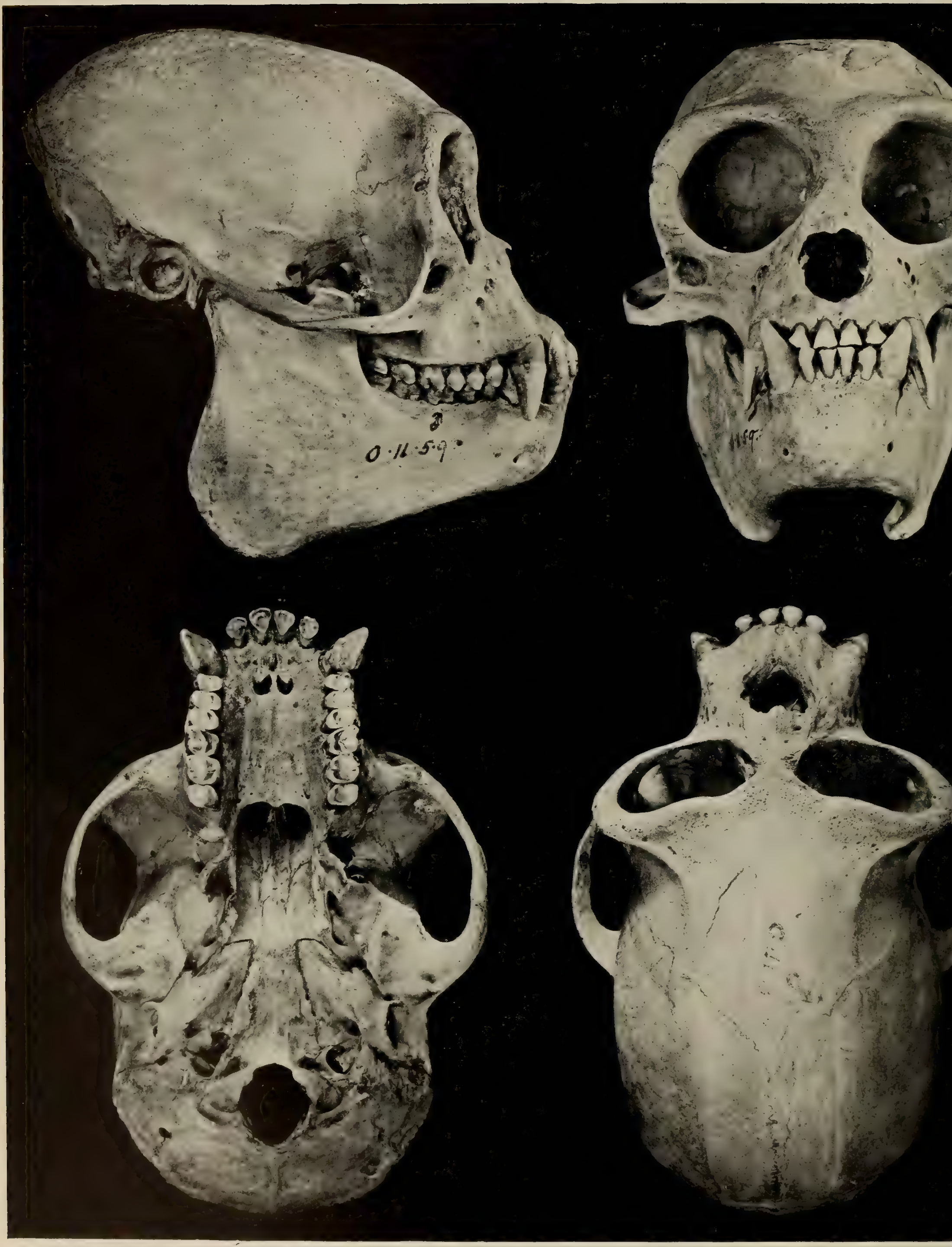
Color. Varying somewhat among individuals. Head blackish brown washed with yellow, or dark gray washed with brown, or with the forehead and nape orange rufous, and top of head chestnut; upper parts dark gray; limbs gray of varying intensity, some specimens when the head is reddish have the limbs and tail rufous, in others the tail is a yellowish gray; under parts pale or yellowish gray or washed with rufous; base of tail beneath varying from pale gray to black; hands and feet yellowish gray with the fingers and toes chestnut, or yellowish brown; an all reddish color does not seem to indicate sex, for some females are more richly colored than the males, that is, exhibit more rufous shades and deeper tints generally. The prevailing color of the major portion of examples is a yellowish gray or ashy brown.

Measurements. Total length, 1,280; tail, 670; foot, 150. Skull: total length, 115; occipito-nasal length, 94; Hensel, 87; intertemporal width, 47; palatal length, 38; breadth of braincase, 61; median length of nasals, 19; zygomatic width, 77; length of upper molar series, 33; length of mandible, 85; length of lower molar series, 37.

The type of the species is in the Paris Museum and was presented to the Institution in 1806, over one hundred years ago by its describer

M. E. Geoffroy St. Hilaire. From unwise exposure to light for over a century it is now nearly white having lost practically all its coloring, a little on sides of head and neck, and on hands and feet, being all that remains of the hues formerly existing. Of course it no longer serves for a description of the species, and I have availed myself for that purpose of the numerous specimens in the British Museum. It is much to be regretted that all the Mammalian types of the Primates in the Paris Museum are deteriorating from the same cause, and in a comparatively brief time will probably be useless for comparison or description. Examples of this species have been described at various times under different names as distinct from each other on account of the presence of an undeveloped thumb, or sometimes merely a tubercle, or its absence altogether. These, however, have no specific value, and individuals have been found with the nailed thumb on one hand and the tubercle on the other, or the tubercle has been present and the thumb absent from the other hand. There seems to be no regularity for the presence or absence of these members, but they merely exhibit individual peculiarities.

The type of *Brachyteleus macrotarsus* Spix is in the Munich Museum. It is very much discolored with dust and greatly faded, but there is no doubt that it is the same as Geoffroy's species, and Spix's name must become a synonym.



LAGOTHRIX LAGOTRICHA.

No. 0.11.5.9. Brit. Mus. Coll. ⅘ Nat. Size.

GENUS LAGOTHRIX. WOOLLY MONKEYS.

$$I.\ \frac{2-2}{2-2};\quad C.\ \frac{1-1}{1-1};\quad P.\ \frac{3-3}{3-3};\quad M.\ \frac{3-3}{3-3}=36.$$

LAGOTHRIX E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 106. Type *Lagothrix cana* E. Geoffroy.

Gastrimargus Spix, Sim. et Vespert. Bras., 1823, p. 39, pls. XXVIII, XXIX.

Head round; body heavy; tail long, prehensile; limbs of moderate length, with thumb and great toe well developed, having the nails of fingers and toes flat and pointed; fur woolly. Skull: an articulation exists between the premaxillaries and nasals at a right angle to their suture. Incisors small, upper incisors the largest; canines large with a frontal groove.

The species of this genus have a round head covered with thick, short hairs, and with the black face are not unlike the negro in appearance. The under fur is very woolly in texture, and this character helped in the definition of the name bestowed by Humboldt upon the first specimen he procured, *lagotricha.* The genus has but few species, characterized by a thickly built heavy body, with limbs moderately lengthened, a well developed thumb and great toe, with compressed and pointed nails. The animals are gregarious, slow in movement, arboreal, and of a mild and tractable disposition.

LITERATURE OF THE SPECIES.

1811. (1815) *Humboldt and Bonpland, Recueil d'Observations de Zoologie et d'Anatomie Comparée.*
LAGOTHRIX LAGOTRICHA first described as *Simia lagotricha.*

1812. *E. Geoffroy Saint-Hilaire, in Annales du Muséum d'Histoire Naturelle, Paris.*
LAGOTHRIX CANA, young male, first described; and L. LAGOTRICHA redescribed as **L. humboldti.*

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*E. Geoffroy in this instance gives as the sole synonym of his *Lagothrix humboldti* the "Caparro Humb. Rec. d'Obser. p. 321," showing evidently that he had seen either the MS. or the published work, probably the first, as Humboldt in his article had given a Latin name to the species, and which in this case I prefer to retain.

1823. *Spix, Simiarum et Vespertilionum Brasiliensium.*
LAGOTHRIX INFUMATA first described as *Gastrimargus infumatus;* and L. CANA redescribed as *Gastrimargus olivaceus.*

1829. *Fischer, Synopsis Mammalium.*
LAGOTHRIX LAGOTRICHA and L. CANA are here placed in the genus CEBUS!

1840. *Wagner, Schreber, Die Säugthiere in Abbildungen nach der Natur mit Beschreibungen. Supplementband.*
Two species are recognized in this work, L. CANA, of which *G. olivaceus* Spix is made a synonym; and L. INFUMATA.

1840. *R. P. Lesson, Species des Mammifères Bimanes et Quadrumanes.*
The genus LAGOTHRIX in this work contains but one species *L. caparro* = L. LAGOTRICHA Humb., and the *G.* INFUMATUS Spix, is described as the female. L. CANA is considered the same as *L. caparro* = L. LAGOTRICHA and *Gastrimargus olivaceus* Spix, = L. CANA Geoff., is considered a variety.

1848. *I. Geoffroy St. Hilaire et Deville, in Comptes Rendus.*
LAGOTHRIX CANA redescribed as *L. castelnaui.*

1851. *I. Geoffroy St. Hilaire, Catalogue des Primates.*
Three species are here recognized: L. CANA; *L. humboldti* = L. LAGOTRICHA; and *L. castelnaui* = L. CANA.

1855. *Wagner, Schreber, Die Säugthiere in Abbildungen nach der Natur mit Beschreibungen. Supplementband.*
L. olivacea (Spix), and L. INFUMATA (Spix), are the two species recognized in this work, with *L. humboldti* ex Tschudi = L. LAGOTRICHA as a synonym of the first, and *L. castelnaui* synonym of the second.

1857. *Pucheran, in Revue et Magasin de Zoologie.*
The paper here published is a review of the species of LAGOTHRIX based upon the examples in the Collection of the Paris Museum. There were ten in all, exclusive of those brought by MM. Castelnau and Deville, and which were described as distinct as *L. castelnaui.* The ten specimens come from Brazil, Colombia and Peru. Descriptions of these are given and the one from Peru is named *L. tschudi,* and the specimen from Cayenne is separated as *L. geoffroyi.* These however are only L. LAGOTRICHA and L. CANA at different ages. *L. castelnaui* = L. CANA, is considered a good species. The ten examples are separated according to locality and four species are recognized: L. CANA, Brazil; *L. humboldti* = L. LAGOTRICHA, New Grenada, (the

banks of the Rio Guaviare and Rio Negro); *L. tschudi* = L. LAGOTRICHA, Peru, and *L. geoffroyi* = L. CANA, Cayenne. A willingness to accept slight shades of coloration, (easily the result of the age of the individual), as having specific value, is discernible throughout the article.

1862. *Reichenbach, Die Vollständigste Naturgeschichte der Affen.*
LAGOTHRIX in this work contains, *L. humboldti* = L. LAGOTRICHA; L. CANA; L. INFUMATA; and *L. castelnaui* = L. CANA.

1862. *Slack, in Proceedings of the Academy of Natural Sciences of Philadelphia.*
In this review of LAGOTHRIX but one species is recognized: *L. humboldti* Geoff., = L. LAGOTRICHA Humb. The latter name is among the synonyms but the law of priority is disregarded. L. CANA, in fact all described forms, are considered as merely representing a variety of coloring of the one species resulting from age and sex.

1876. *Schlegel, Muséum d'Histoire Naturelle des Pays-Bas, Simiæ.*
Three species are recognized: L. CANA; *L. humboldti* = L. LAGOTRICHA, which name is rejected as insufficiently described, and L. INFUMATA Spix made a synonym; and *L. poppigii* Schinz, = L. LAGOTRICHA; with *L. castelnaui, L. humboldti* Tschudi, and *L. tschudi juv.* Pucheran, as synonyms.

1883. *A. von Pelzeln, Brasilische Säugethiere.*
Two species are apparently recognized in this List, L. CANA and L. INFUMATA; but under the last as its first synonym is *Simia* CANA Geoff. (!) Of course a form cannot be both a species and a synonym, and the method adopted by the Author is puzzling to say the least. If *cana* and *infumata* are the same, then CANA, having been published eleven years before *infumata,* becomes the name of the species, and *infumata* the synonym, but never otherwise as von Pelzeln has given it. *L. humboldti* Geoff., = L. LAGOTRICHA Humb.; *L. geoffroyi* Pucher.; *L. poppigii* Schinz; *L. tschudi* Pucher.; *L. castelnaui* Geoff.; are all considered synonyms of L. INFUMATA, but which is itself a synonym of L. CANA Geoff., this last being considered the adult.

1907. *D. G. Elliot, in Annals and Magazine of Natural History.*
LAGOTHRIX LUGENS ex Colombia first described.

1909. *D. G. Elliot, in Annals and Magazine of Natural History.*
LAGOTHRIX THOMASI, and L. UBERICOLA first described.

GEOGRAPHICAL DISTRIBUTION OF THE SPECIES.

The majority of the species of Lagothrix are found in the western portion of Brazil, in the forests of the Upper Amazon and its tributaries. L. lagotricha ranges from the banks of the Rio Guaviare, a branch of the Orinoco, to the district southwest of the Rio Negro, and on the Upper Rio Magdalena, Colombia, to Chanchamayo in Peru, from which place specimens now in the British Museum were brought by Kalinowski. Near the mouth of the Rio Tocantins, Brazil, L. cana occurs, and goes westward to the forests watered by the Rio Solimoens and Rio Iça. In the mountains, north of Tolima, Ecuador, at an elevation of 5,000 to 7,000 feet L. lugens was procured; and on the banks of the Rio Copataza, and near Macas in Ecuador, and also in the valley of the Peruvian Amazons, L. infumata is found. In the forests through which the Rio Juará flows near Barrigudo, L. ubericola was obtained, extending its range into Peru, and also along the Rio Solimoens; and at Callanga, Department of Cuzco, Peru, L. thomasi is found.

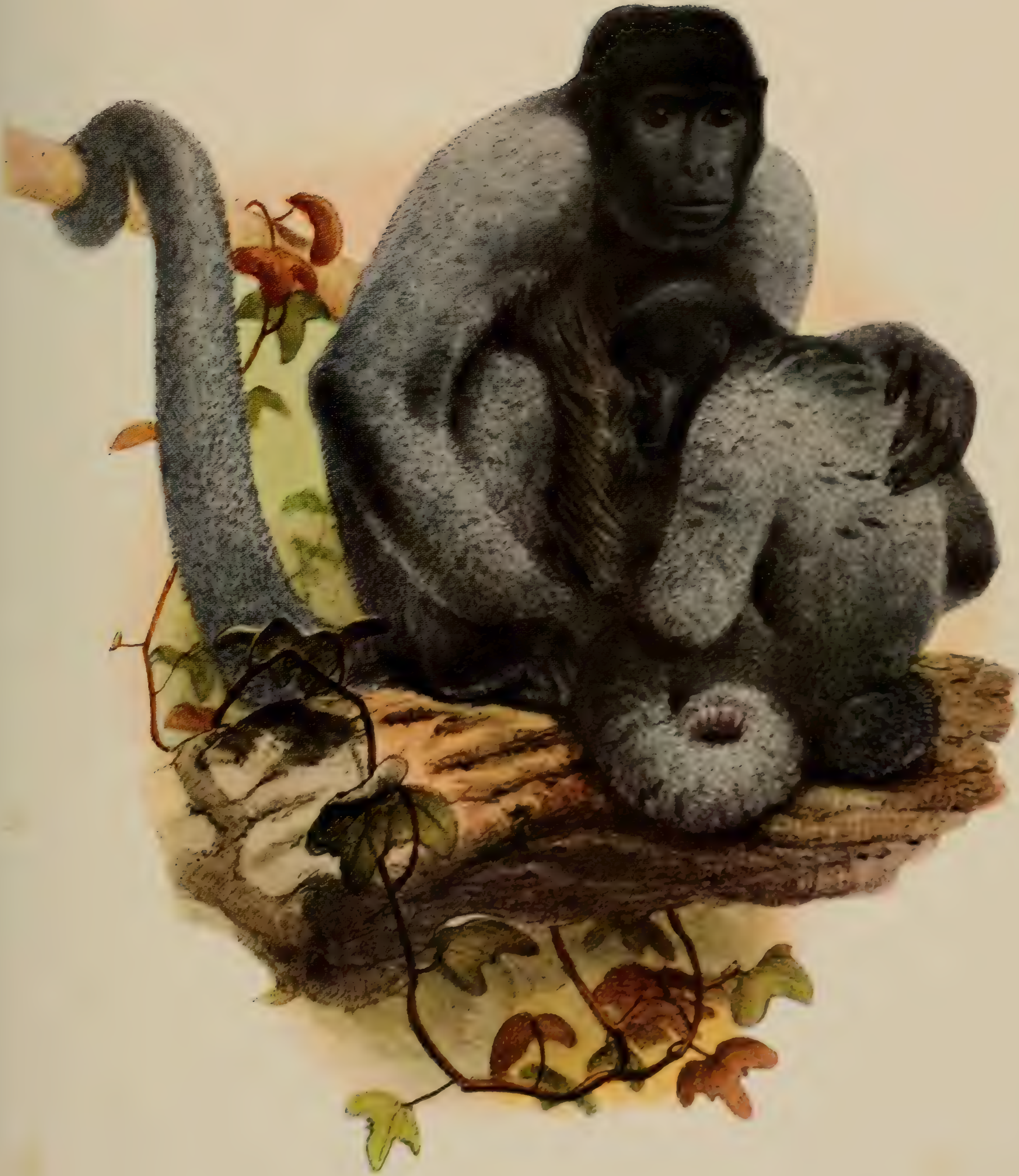
KEY TO THE SPECIES.

A. Body thick, heavy; fur woolly; tail long.
  a. General color blackish hoary gray, or bluish gray .... *L. lagotricha.*
  b. General color dark purplish brown .... *L. lugens.*
  c. General color grizzled gray and ochraceous .... *L. thomasi.*
  d. General color grizzled wood brown .... *L. ubericola.*
  e. General color dark reddish brown; under parts black .... *L. infumata.*
  f. General color buffy gray; under parts ochraceous.... *L. cana.*

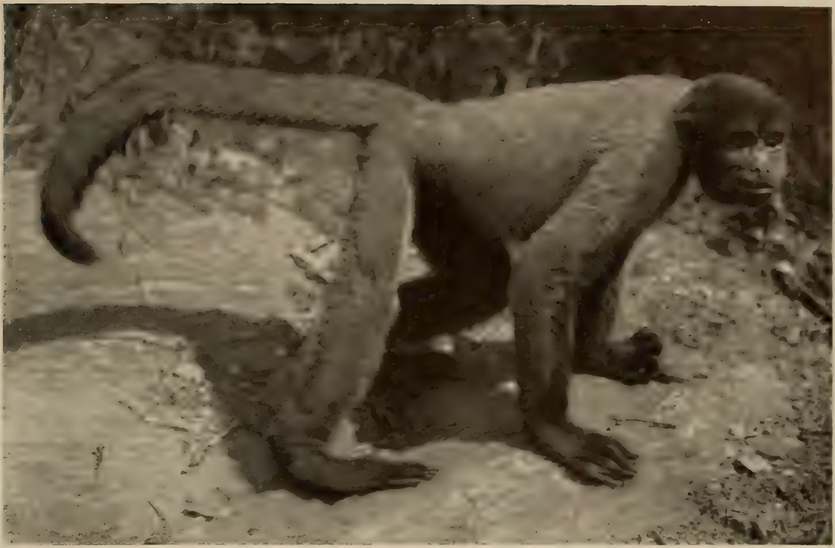
Lagothrix lagotricha (Humboldt).

Simia lagotricha Humb., Rec. Obs. Zool., I, 1811, (1815), pp. 322, 354.

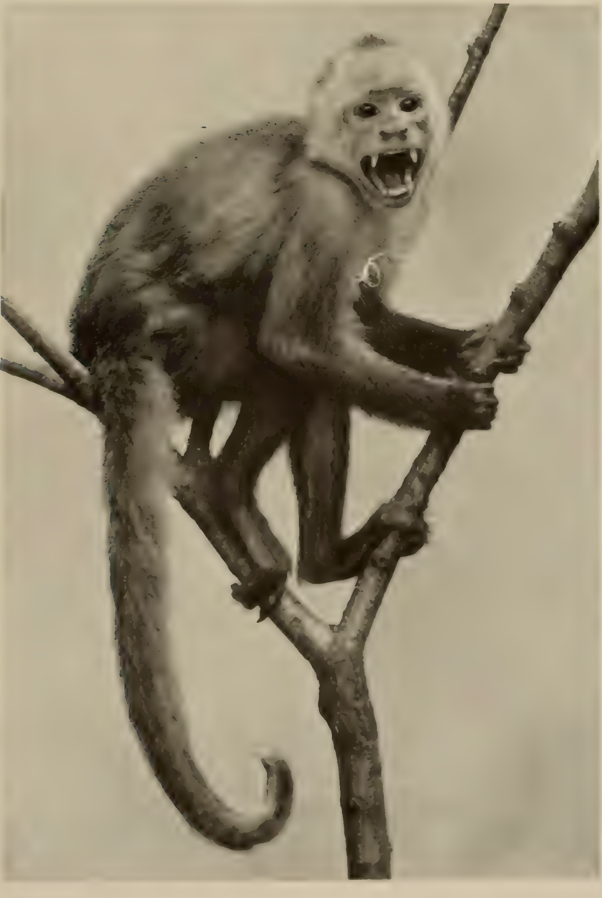
Lagothrix humboldti E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 107; *Id.* Cours Hist. Nat. Mamm., 1828, p. 35, 9me Leçon; I. Geoff., Cat. Primates, 1851, p. 50; Pucher., Rev. Mag. Zool., 1857, p. 292; Slack, Proc. Acad. Nat. Scien. Phil., 1862, p. 514; Reichenb., Vollständ. Naturg. Affen, 1862, p. 78, figs. 173, 175; Sclat., Proc. Zool. Soc. Lond., 1863, p. 374, pl. XXXI; Bates, Nat. Riv. Amaz., II, 1863, p. 320; von



LAGOTHRIX LAGOTRICHA



LAGOTHRIX LAGOTRICHA.



CEBUS CAPUCINUS.

Pelz., Zool.-Bot. Ges. Wien, 1883, Beiheft, p. 7; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 162, (Part.).

Cebus lagothrix Fisch., Syn. Mamm., 1829, p. 41.

Lagothrix caparro Less., Spec. Mamm., 1840, p. 125.

Lagothrix tschudi Pucher., Rev. Mag. Zool., 1857, p. 296.

Lagothrix olivacea Bates, Nat. Riv. Amaz., II, 1863, p. 320, (nec Spix).

Lagothrix lagothrix Forbes, Handb. Primates, I, 1894, p. 222, pl. XX.

HUMBOLDT'S WOOLLY MONKEY.

Type locality. Banks of the Guaviare, a branch of the Upper Orinoco River, Brazil.

Geogr. Distr. River Guaviare and the Upper Amazonian region in the district lying south-west of the Rio Negro, and in the Upper Magdalena Valley, Colombia. Chanchamayo, Peru (Kalinowski). Specimen in British Museum Collection.

Color. Head to nape black; hands and feet and under parts of body black; upper parts, limbs and tail blackish hoary gray; sometimes bluish gray.

Measurements. Skull: occipito-nasal length, 95: total length, 110; Hensel, 77; zygomatic width, 73; intertemporal width, 53; breadth of braincase, 65; palatal length, 30; median length of nasals, 11; length of upper molar series, 25; length of mandible, 76; length of lower molar series, 29.

The type of *L. tschudi* Pucheran, in the Paris Museum is practically in all respects the same as the present species. It is lighter in color on back and tail but has undoubtedly faded, and also the animal was not entirely mature.

Bates writing on the species of LAGOTHRIX (l. c.) which he calls 'Barrigudo Monkeys' says, "Of the remainder, the most remarkable is the Macaco barrigudo, or big-bellied monkey of the Portuguese Colonists, a species of Lagothrix. The genus is closely allied to the Coaitás, (Ateles), having, like them, exceedingly strong and flexible tails, which are furnished underneath with a naked palm like a hand for grasping. The Barrigudos, however, are very bulky animals, whilst the Spider monkeys are remarkable for the slenderness of their bodies and limbs. I obtained specimens of what have been considered two species, one, (G. olivaceus of Spix?) having the head clothed with gray, the other, (L. Humboldtii) with black fur. They both live together in the same places and are probably only differently colored individuals of one and the same species. I sent home a very large male of one of these kinds, which measured twenty-seven inches in length of trunk, the tail being twenty-six inches long; it was the largest monkey I saw in America with the exception of a black Howler whose body was twenty-eight inches in height! The skin of the face of the Barrigudo is black and wrinkled, the forehead is low, with the eyebrows projecting, and, in short, it altogether resembled in a striking manner those of an old negro. In the forests, the Barrigudo is not a very active animal; it lives exclusively on fruits, and is much persecuted by the Indians, on account of the excellence of its flesh as food. From information given me by a collector of birds and mammals, whom I employed, and who resided a long time amongst the Tucuna Indians near Tabatinga, I calculated that one horde of this tribe, 200 in number, destroyed 1,200 of these monkeys annually for food. This species is very numerous in the forests of the higher lands, but owing to long persecution it is now seldom seen in the neighborhood of the larger villages. It is not found at all on the Lower Amazons. Its manners in captivity are grave, and its temper mild and confiding like that of the Coaitás. Owing to these traits, the Barrigudo is much sought after for pets; but it is not hardy like the Coaitás, and seldom survives a passage down the river to Para."

LAGOTHRIX LUGENS Elliot.

Lagothrix lugens Elliot, Ann. Mag. Nat. Hist., XX, 7th Ser., 1907, p. 193.

Type locality. Mountains 2° 20′ north of Tolima, Colombia. Altitude 5,000 to 7,000 feet. Type in British Museum.

Genl. Char. Body stout, heavy, like L. LAGOTRICHA, color very different; fur thick, woolly; limbs moderate in length; tail very long, and very large and broad at base. Nasals very different in shape from those of L. LAGOTRICHA.

Color. Male. Head, arms and body dark purplish brown almost black; legs and tail blackish brown washed with gray, the hairs being grayish brown at base, then black and tipped with gray or yellowish; breast reddish chestnut, rest of under parts black.

Measurements. Size same as L. LAGOTRICHA. Skull: total length, 112, (occiput broken); occipito-nasal length, 105; zygomatic width, 74; intertemporal width, 45; palatal length, 34; breadth of braincase, 57; length of braincase from end of nasals, 79; median length of nasals, 13; width of nasals anteriorly, 13; length of upper molar series, 24; length of mandible, 74; length of lower molar series, 30.5.

Two specimens are in the British Museum Collection, which differ so markedly from all others, that it seems impossible to assign them to any known or described species. The fur is soft and very thick particularly so at the base of the tail. One is dark purplish brown or black on the upper parts to rump, when it becomes blackish gray on legs and tail; the other example is darker, being nearly black with but little of the purplish shade. The skulls resemble, as may be expected those of L. LAGOTRICHA and L. INFUMATA, in general, but the nasals have a depression in the center, and the anterior half stands at right angles to the posterior, and they are very broad anteriorly; the braincase is not so long as those of the species compared, and the narial opening is of a different shape, like a heart but not so pointed, more rounded on the lower side.

LAGOTHRIX THOMASI Elliot.

Lagothrix thomasi Elliot, Ann. Mag. Nat. Hist., IV, 1909, 8th Ser., p. 245.

Type locality. Callanga, Cuzco, Peru, 1,500 m. altitude. Type in British Museum.

Color. Head in front of ears seal brown; upper parts and sides of body, and arms to elbows grizzled gray and ochraceous, the hairs being ochraceous at base, ringed with black and white and tipped with white; dorsal line blackish; hairs on back of neck ochraceous with a single broad subterminal black band and white tips, causing this part to be darker than the rest of the upper parts, except dorsal line; forearms and legs, grizzled black and tawny, the hairs being tawny with subterminal black bar and white tips; hands and feet black, the hairs with tawny tips; inner side of arms and legs, and central portion of chest and abdomen, black; tail above, and basal portion beneath grizzled gray and ochraceous like back; remainder beneath black. Ex type British Museum.

Measurements. Size equal to L. LAGOTRICHA. Skull: occipitonasal length, 98; Hensel, 88.4; zygomatic width, 79.4; interorbital width, 59.4; palatal length, 39.6; median length of nasals, 10.7; length of upper molar series, 24; length of mandible, 78; length of lower molar series, 38.5. Ex type British Museum.

This is a larger monkey than L. UBERICOLA and fully equal in size to L. LAGOTRICHA. The type is an old individual, with teeth greatly worn and blackened. It is much darker than L. UBERICOLA and the base of the hairs ochraceous instead of buff. There are none of the blue or silver gray hues so characteristic of L. LAGOTRICHA, and the red of L. CANA is absent altogether. The specimen is a female.

LAGOTHRIX UBERICOLA Elliot.

Lagothrix ubericola Elliot, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 246.

Type locality. Barrigudo, River Juruá, Upper Amazon. Type in British Museum.

Geogr. Distr. Upper Amazon, Rio Solimoens and Rio Juruá, Peru.

Genl. Char. Color pale; hair soft, rather short, buff at base.

Color. Top of head to nape, inner side of hands and feet black; upper parts of body, and arms to elbows grizzled wood brown, with a reddish tinge on rump and thighs, the hairs being buff at base, with a subterminal black ring and whitish tips; outer side of forearms iron gray; tops of legs to knees iron gray, when the color becomes blackish brown; the hairs with yellow tips on the fingers and toes, which are black; flanks and sides of abdomen yellowish brown; chest and middle of abdomen black; hairs of tail above like upper side of legs, tawny ochraceous with black and white rings and white tips; beneath rufous brown at base, rest black. Ex type British Museum.

Measurements. About the size of L. LAGOTRICHA but more slender in body. Skull: total length, 116.6; occipito-nasal length, 103; zygomatic width, 65.7; intertemporal width, 59.5; palatal length, 30; breadth of braincase, 61.5; median length of nasals, 10.6; length of upper molar series, 25.2; length of mandible, 69; length of lower molar series, 29. Ex type in British Museum.

The type in the British Museum is from the Juruá River, Upper Amazon, Brazil. It is full grown but not an *old* adult. It differs markedly from L. LAGOTRICHA in color, and as the young of that species resemble the adults, these cannot be considered as possessing immature coats and therefore are not to be regarded as representing the same species. The locality of these specimens is south of the range of L. LAGOTRICHA. It is not so large as the last named species, is more slenderly built, and its very light color, a grizzled wood brown, makes it conspicuously different from all the other members of the genus. The type is unique.

LAGOTHRIX CANA (Humboldt).

Simia cana Humb., Rec. Obs. Zool., I, 1811, (1815), p. 354.

Lagothrix cana E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812,

p. 107; *Id.* Cours Hist. Nat. Mamm., 1828, p. 35, 9me Leçon; Kuhl, Beitr. Zool., 1820, p. 27; Desm., Mamm., 1820, p. 77; Schinz, Syn. Mamm., I, 1844, p. 71; I. Geoff., Cat. Primates, 1851, p. 50; Pucher., Rev. Mag. Zool., 1857, p. 39, pl. XXVIII; Reichenb., Vollständ. Naturg. Affen, 1862, p. 72, figs. 176, 177.

Gastrimargus olivaceus Spix, Simiar. et Vespert. Bras., 1823, p. 29, pl. XXVIII.

Lagothrix cana Wagn., Schreb., Säugth. Suppl., I, 1840, p. 186, pl. XXVI E; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 162.

Lagothrix olivacea Wagn., Schreb., Säugth. Suppl., V, 1855, p. 73.

Lagothrix geoffroyi Pucher., Rev. Mag. Zool., 1857, p. 296, (nec Schinz).

Type locality. "Probablement le Brésil."

Geogr. Distr. Mouth of the Rio Tocantins, (Spix), to the forests along the Rio Solimoens.

Genl. Char. Under parts ochraceous.

Color. Narrow line on forehead and sides, buff; top of head and nape dark brown with a reddish tinge; back, flanks and limbs, buffy gray; forearms and legs below knees darker; inner side of limbs blackish; hands and feet blackish brown; throat reddish brown; under parts ochraceous; tail above dark brown on basal half, remainder gray tinged with reddish, beneath dark brown.

Measurements. Smaller than the other members of the genus. Skull: occipito-nasal length, 83; Hensel, 68; zygomatic width, 60; intertemporal width, 48; median length of nasals, 9; length of upper molar series, 19; length of mandible, 64; length of lower molar series, 30.

The example in the Paris Museum marked as Geoffroy's type was obtained from the 'Cabinet de Lisbonne' in 1809. It is immature, in good condition though somewhat faded, and is yellowish gray with a reddish brown head, and tail and limbs like the body but darker. Much of the fur has fallen from the chest and abdomen, but what remains is a dark ochraceous rufous, and there is no evidence of any black color having been present. There are two specimens in the Museum, adult and young, the latter stated to have come from Brazil.

The type of *Gastrimargus olivaceus* Spix, in the Munich Museum agrees in all respects with Geoffroy's type, and Spix's name must become a synonym of L. CANA. It is quite different both in color and texture from G. INFUMATUS Spix. A young individual of *G. olivaceus* is also in the Museum. It resembles the type, but is slightly darker in the general color.

Lagothrix infumata (Spix).

Gastrimargus infumatus Spix, Simiar. et Vespert. Bras., 1823, p. 41, pl. XXIX; Less., Spec. Mamm., 1840, p. 126, juv.; Wagn., Abhand. Bayer. Akad. Münch., V, 1848, p. 417; *Id.* Schreb., Säugth. Suppl., V, 1855, p. 73.

Lagothrix infumata Schinz, Syn. Mamm., I, 1844, p. 71; Pucher., Rev. Mag. Zool., 1857, p. 298; Reichenb., Vollständ. Naturg. Affen, 1862, p. 72, fig. 178; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 46; Sclat., Proc. Zool. Soc. Lond., 1871, p. 219; von Pelz., Zool.-Bot. Ges. Wien, 1883, Beiheft, p. 7; Forbes, Handb. Primates, I, 1894, p. 224.

Lagothrix poppigii Schinz, Syn. Mamm., I, 1844, p. 72; Pucher., Rev. Mag. Zool., 1857, p. 298; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 164.

Lagothrix geoffroyi Schinz, Syn. Mamm., I, 1844, p. 71, (nec Pucheran).

Lagothrix castelnaui I. Geoff. et Deville, Compt. Rend., XXVII, 1848, p. 498; I. Geoff., Cat. Primates, 1851, p. 50; Casteln., Expéd. Amér. Sud, 1855, p. 5, pl. I; Pucher., Rev. Mag. Zool., 1857, p. 289; Reichenb., Vollständ. Naturg. Affen, 1862, p. 72.

BROWN WOOLLY MONKEY.

Type locality. Forests near the Rio Iça, Upper Amazon. Type in Munich Museum.

Geogr. Distr. Valley of the Peruvian Amazon; Valley of the Rio Copataza, and near Macas, Ecuador.

Genl. Char. Under parts jet black.

Color. Top and sides of head, chin, neck, upper parts of body, arms to elbows and upper part of thighs to knees, dark reddish brown; forearms, wrists, hands, back of thighs and legs, ankles and feet black; tail blackish brown. Most of the under parts are bare, but the hair remaining from lower part of chest to groin is long and jet black. Ex 'type' Munich Museum, nearest in color to Spix's figure. Another specimen also marked 'Type,' has the upper part of breast light reddish brown, lower breast and belly jet black.

Measurements. Total length, 1,180; tail, 655; foot, 150. Mounted specimen, no skull.

Spix's *Gastrimargus infumatus* is represented in the Munich Museum by four examples all marked *'Types.'* They are not all alike in color, but all are in bad condition, and one, the nearest in color to the figure in Spix's plate has lost most of the hair on the body. They are all reddish brown, of different shades however, caused somewhat, possibly, by fading or from the accumulation of dust. One has the body above of a buff color, another raw umber, while another is dark reddish brown. The tails vary also in color from a dark reddish brown to almost black. The fur is short, rather thick, soft and silky to the touch, very different from that of L. LAGOTRICHA and the group it represents.

GENUS CEBUS. CAPUCHIN MONKEYS.

$$\text{I. } \frac{2-2}{2-2}; \quad \text{C. } \frac{1-1}{1-1}; \quad \text{P. } \frac{3-3}{3-3}; \quad \text{M. } \frac{3-3}{3-3} = 36.$$

CEBUS Erxl., Syst. Regn. Anim., 1777, pp. 44-54. Type *Simia capucina* Linnæus.

Sapajus Kerr, Anim. Kingd., 1792, Nos. 64-77, pp. 74-79.

Calyptrocebus Reichenb., Vollständ. Naturg. Affen, 1862, p. 56, pls. VI, figs. 93-102; VII, figs. 103-117.

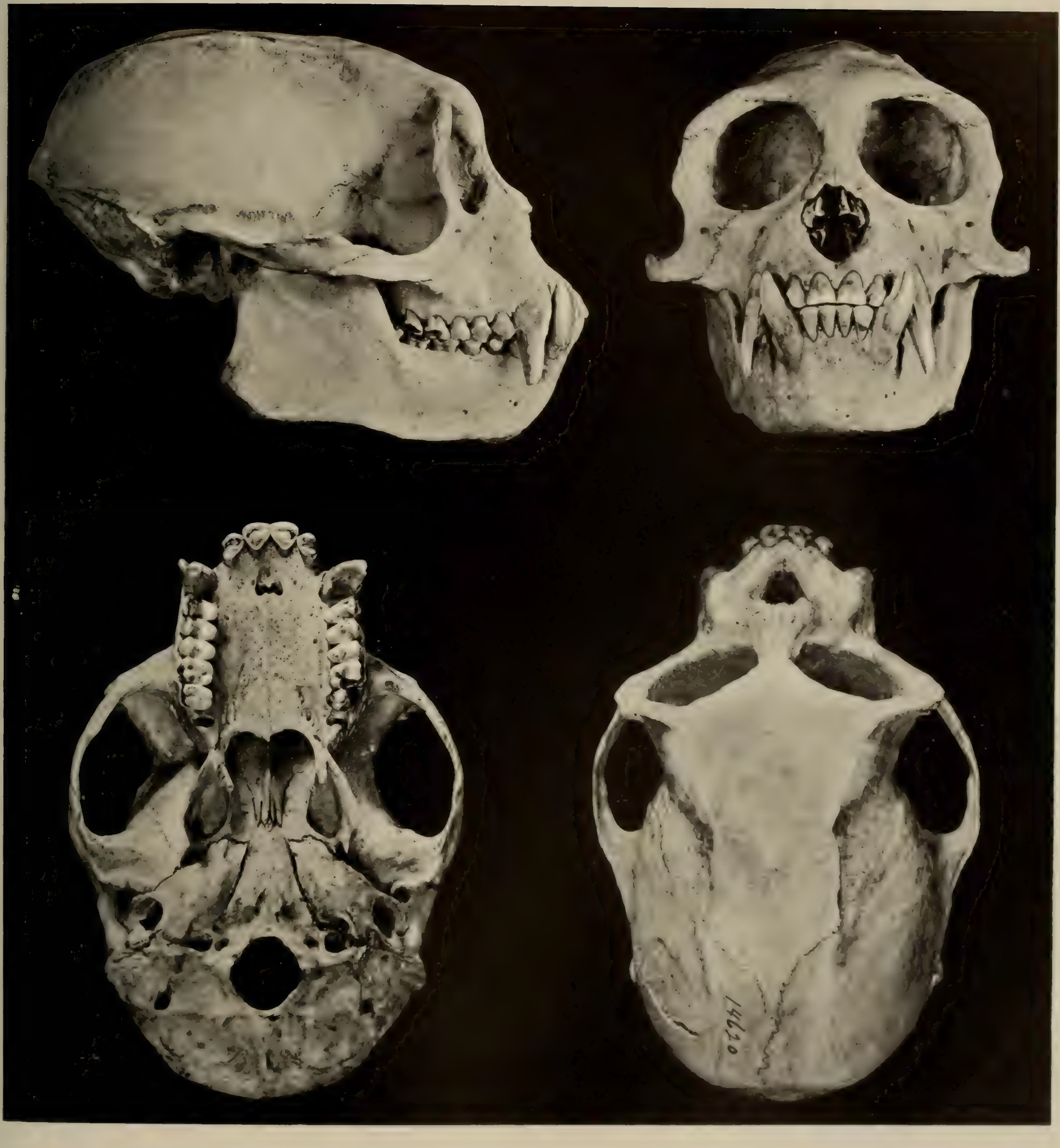
Pseudocebus Reichenb., Vollständ. Naturg. Affen, 1862, p. 55, pls. VI, VII, figs. 83, 84, 89, 90, 108.

Otocebus Reichenb., Vollständ. Naturg. Affen, 1862, p. 56, pls. VII, VIII, figs. 125-135.

Eucebus Reichenb., Vollständ. Naturg. Affen, 1862, p. 56, pl. VI, fig. 92; pl. VIII, figs. 124-135.

Head round; body robust; limbs moderate; thumb well developed; tail long, covered with hair, no distal naked portion, prehensile; hair on face short, whiskers present; no crest but tufts on head sometimes present; canines large; molars with four cusps, connected by ridges; posterior molar in both jaws the smallest.

The Sapajous or Capuchins, comprising the genus Cebus, are the most common monkeys seen in captivity, and most familiar to the dwellers of lands distant from their habitats. The head is round, the face flat, without a protruding muzzle. The skull has the cranial portion well developed, the facial region being very short in comparison, and the brain is large with numerous convolutions of the outer surface of the cerebrum. The limbs are of moderate length, the arms and legs about equal, and rather slender, while the thumb is well developed, with the nails of the digits in some species compressed laterally. The tail is long, covered with hair to the tip, and although there is no clinging bare surface on the lower side, it is prehensile, and is of great assistance in various ways, though lacking the ability to assume the place of another hand, as is so eminently the case of this member among the species of the genus Ateleus. As a rule the Cebi are of small size, with a slender waist, and the fur is inclined to a woolly texture, and usually dense upon the crown of the head, and short on this part, though in some species there is an elongated tuft on



Cebus maliticsus.

No. 14620 Amer. Mus. Nat. Hist. Coll. 4/5 Nat. Size

each side. The orbits are large and close together, the nasals being quite narrow; the frontals contain air cavities, and there is no external meatus to the ear. The incisors incline slightly forward, and are shorter than the canines; the molars have four cusps, and on the crowns there are two transverse ridges and one oblique, the last going from the front inner cusp to the hind outer cusp. In the often great variation in the color of their fur, witnessed among the members of the various genera of the Primates, there is probably no genus whose species exhibit a more extreme diversity of hues than do those belonging to CEBUS, and in some cases it would appear that each individual possessed the power of selecting the color of its own dress, and the taste for diversity of hues has been so wide, that it is not easy sometimes to find members of the same species alike. This instability of color has been one of the greatest, if not indeed, THE greatest obstacle to all investigators in the determination of the species, for with the majority of the earlier Authors, color was the chief character for a distinct specific rank, cranial differences having been little regarded, and consequently the number of species was largely increased. The fact that great variability in color among individuals of the same species, often from the same locality, was not known; or perplexed at the great diversity of hues exhibited by his examples, and unable to explain the problem, an Author would, happily, sometimes, place all his specimens in one species, geographical distribution receiving little consideration. Unfortunately the latter method was not often adopted, and multiplication of species has been with many writers more the rule than the exception, and the synonymy consequently greatly increased thereby. Another difficulty with the Cebi has been, and is still to-day, that Mammalogists have been obliged to content themselves with the descriptions given by Authors, (few types being usually accessible), often inadequate, brief and insufficient, and many have been misled by these, and wrong conclusions reached. Then again types have disappeared, and the brief description originally given was totally insufficient for any one to decide what the species really was, or, (as the Author of this work has found to be the case in too many instances), neglect for their proper preservation, and the lapse of time, have left the types so dilapidated and faded, that they no longer agreed with the original description, nor gave even a tangible clue to their appearance in life.

It is not to be wondered at, therefore, that so much diversity of opinion has existed and still does exist, among writers, as to the number of species there really is at the present day, or that the synonymy should be so greatly confused. The writer has examined all the types of Cebus that are accessible at the present time, and his descriptions have been taken from them as they now appear, some much changed from their former state, with the delicate colors gone, and occasionally important portions of the fur having disappeared also; but the manner in which the various colors are distributed could in some cases still be traced, and an idea of the animal's original appearance might thus be obtained. When types were altogether missing, and the description first given was insufficient for the recognition of the species, and there was no other example from the same locality to show what the type may have been, little could be accomplished, and the species would have to be dropped altogether as undeterminable, or allowed to stand with the original description as a guide, in hopes that some one more fortunate, might in the future be able to discover what it really might be. The species that follow are believed to be all of the genus Cebus existing to-day that are known, twenty-four in all, but the types of some, embraced in the various synonyms, no longer existing, the conclusions in such instances have been reached through the, often imperfect or too brief, descriptions originally published.

LITERATURE OF THE SPECIES AND SUBSPECIES.

1758. *Linnæus, Systema Naturæ.*
Two species of Cebus are given in the list of Simiæ, *S.* apella and *S.* capucinus. These were described by Linnæus in a work entitled 'Museum Regis Adolphi Frederici,' published in 1754. The original description, slightly transposed, is repeated, and the above work the only reference cited.

1766. *Linnæus, Systema Naturæ.*
The two species of Cebus described in the 10th edition appear again here, with the same descriptions, but in the case of C. capucinus farther on, Linnæus unfortunately, gives a more lengthy description and in certain parts a very erroneous one, i. e. "pectus ferrugineus," which in no wise is ever the case in the color of the animal he originally described and figured as C. capucinus. This error has been the cause of the transference of the name C. capucinus to an entirely different animal, the one Linnæus called C. apella, and these two species have had the wrong appellation applied to them since that time by all Mammalogists, even though some writers had discovered the

error that had been committed, but had not the courage to correct it. A third species C. FATUELLUS is also here first described. *S. trepidus* is undeterminable. All are placed in *Simia.*

1777. *Erxleben, Systema Regni Animalis.*
The following species of CEBUS are recorded: C. FATUELLUS, C. CAPUCINUS and C. APELLA, of which the Author remarks "Hic quibus differat a capucino, non satis intelligo."
So early had the confusion between these totally distinct species commenced. *C. trepidus* is undeterminable as "manibus pedibusque cæruleis" is found in no CEBUS known. Other species are given under CEBUS but do not belong to the genus.

1788. *Gmelin, Systema Naturæ.*
C. CAPUCINUS is given with Linnæus' original description, and his, the only work cited; the synonymy, however, is mixed. C. APELLA with the original description; and C. FATUELLUS. All these are placed in the genus *Simia.*

1792. *Kerr, Animal Kingdom, Mammalia.*
CEBUS CAPUCINUS renamed *Simia* (*Sapajus*) *capucinus albulus.*

1797. *J. B. Audebert, Histoire Naturelle des Singes et des Makis.*
Three species and three varieties, with figures of all are given in this work under *Simia:* (*S.*) FATUELLUS; (*S.*) APELLA; var. A. a dark individual of the same species which died in the Menagerie of the Paris Zoological Garden. (*S.*) CAPUCINUS, var. A. represents the typical style; but (*S.*) *capucinus,* with red on forearms, and var. B. with a red breast, are unlike any example of C. CAPUCINUS I have ever seen, and it is impossible to determine what species they represent.

1811. *Humboldt et Bonpland, Recueil d'Observations de Zoologie*
(1815). *et d'Anatomie Comparée.*
In his subdivision CEBUS six species are recognized. CEBUS ALBIFRONS first described; and (*Simia*) CAPUCINUS Linn., redescribed as *Simia hypoleucus;* C. APELLA (Linn.), called (*S.*) *capucina* (nec Linn.); (*S.*) CIRRIFER first described, and (*S.*) VARIEGATUS E. Geoffroy, but not described by that Author in 1811.

1812. *E. Geoffroy St. Hilaire, in Annales du Muséum d'Histoire Naturelle, Paris.*
In his Tableau des Quadrumanes, this Author gives the following species of CEBUS: *C. apella* (nec Linn.), = C. FATUELLUS; C. CIRRIFER; *C. barbatus* = C. FLAVUS; *C. trepidus* undetermin-

able; C. ALBIFRONS; *C. niger* = C. CIRRIFER; C. VARIEGATUS first described; and *C. albus,* an albinistic individual of C. FLAVUS.

1820. *Kuhl, Beiträge zur Zoologie vergleichenden Anatomie.*
The following species are included in the genus CEBUS: C. CIRRIFER; C. FATUELLUS; C. VARIEGATUS; C. FLAVUS; *C. barbatus* = C. FLAVUS; *C. albus,* (albino); C. FRONTATUS first described; *C. niger* = C. CIRRIFER; C. ALBIFRONS; *C. robustus* = C. VARIEGATUS; *C. xanthosternos* = C. VARIEGATUS; C. APELLA; C. CAPUCINA; *C. lunatus* = C. FRONTATUS; *C. hypoleucus* = C. CAPUCINUS (Linn.).

1820. *Desmarest, Mammalogie et Description des Espèces de Mammifères.*
A List of the species of CEBUS is here given as recognized by the Author, very similar to that of Kuhl. *C. robustus* = C. VARIEGATUS; C. APELLA; *C. griseus* = C. APELLA; *C. barbatus* = C. FLAVUS; C. FRONTATUS; *C. niger* = C. CIRRIFER; C. VARIEGATUS; *C. fulvus* = C. FLAVUS; C. ALBIFRONS; *C. lunatus* Kuhl = C. FRONTATUS Kuhl; *C. xanthosternos* = C. VARIEGATUS; C. FATUELLUS; *C. capucinus* = C. APELLA (Linn.); *C. hypoleucus* = C. CAPUCINUS (Linn.).

1820. *F. Cuvier, Histoire Naturelle des Mammifères.*
C. VARIEGATUS Humb., redescribed as *C. monachus.*

1823. *Spix, Simiarum et Vespertilionum Brasiliensium.*
Six species are recorded by this Author as follows: C. MACROCEPHALUS; C. UNICOLOR; and C. LIBIDINOSUS first described; *C. xanthocephalus* = C. VARIEGATUS; *C. gracilis* = C. ALBIFRONS; and *C. cucullatus* = C. VARIEGATUS.

1825. *F. Cuvier, Histoire Naturelle des Mammifères.*
C. CHRYSOPUS first described.

1826. *Maximilian, Prinzen zu Wied, Beiträge zur Naturgeschicte von Brasilien.*
A list of the species of CEBUS from Brazil as known to the Author is here given: *C. fatuellus* (nec Linn.), = C. CIRRIFER; *C. robustus* = C. VARIEGATUS; *C. xanthosternos* = C. VARIEGATUS; C. CIRRIFER; and C. FLAVUS.
The type of *C. robustus* seems to have disappeared from the New York American Museum of Natural History; in fact no type of CEBUS from the Maximilian collection is now in the Museum.

1827. *C. J. Temminck, Monographies de Mammalogie.*
The Author makes remarks upon species of CEBUS, and considers C. VARIEGATUS Kuhl, to be the young of *C. xanthosternos* Wied, which is figured by Spix as *C. xanthocephalus;* and *C. lunatus* Kuhl, (nec F. Cuv.), is the young of C. CIRRIFER!

1829. *J. B. Fischer, Synopsis Mammalium.*
Among the many species of different genera included by this Author in the genus CEBUS, the following are now considered as properly belonging to it: C. CIRRIFER; *C. robustus* = C. VARIEGATUS; C. FATUELLUS; *C. xanthosternos* = C. VARIEGATUS; C. APELLA; *C. griseus* Desm., = C. APELLA (Linn.); *C. barbatus* = C. FLAVUS; C. LIBIDINOSUS; C. UNICOLOR; *C. niger* = C. CIRRIFER; C. FLAVUS; *C. capucinus* = C. APELLA (Linn.); *C. trepidus* undeterminable; *C. hypoleucus* = C. CAPUCINUS (Linn.); C. ALBIFRONS; C. CHRYSOPUS; and *C. gracilis* Spix = C. ALBIFRONS (Humb.).

1830. *J. B. Fischer, Addenda, Emendanda et Index ad Synopsis Mammalium.*
The above list is here repeated with the following additions and changes: *C. xanthocephalus* Spix = C. VARIEGATUS E. Geoff., is made var. B. of *xanthosternos* Kuhl, which = C. VARIEGATUS; C. APELLA Linn., is given two varieties, A. *C. antiguensis* Shaw, and B. *C. paraguayensis* Azara, both undeterminable; and *C. niger* = C. CIRRIFER.

1830. *J. R. Rengger, Naturgeschichte der Säugethiere von Paraguay.*
CEBUS AZARÆ first described.

1833. *F. Cuvier, Histoire Naturelle des Mammifères.*
C. FRONTATUS Kuhl, redescribed as *C. lunatus;* and C. CIRRIFER Humb., redescribed as *C. cristatus.*

1840. *Wagner, Schreber, Die Säugthiere in Abbildungen nach der Natur mit Beschreibungen. Supplementband.*
In this work the Author commences with C. APELLA (Linn.), under which as var. a. he places C. AZARÆ Rengg. He then gives a list of the described species as follows, eighteen in number: *C. gracilis* Spix, = C. ALBIFRONS Humb.; C. FLAVUS Kuhl; C. UNICOLOR Spix; *C. barbatus* Geoff., = C. FLAVUS Kuhl; *C. macrocephalus* Spix, = C. APELLA (Linn.); C. CAPUCINUS (Linn.); *C. griseus* F. Cuv., = C. VARIEGATUS E. Geoff.; *C. hypoleucus* Humb., = C. CAPUCINUS (Linn.); *C. capucinus* (nec Linn.), = C. APELLA (Linn.); *C. monachus* F. Cuv., = C. VARIEGATUS E. Geoff.; *C. xanthosternos* Kuhl, = C. VARIE-

GATUS E. Geoff.; *C. cucullatus* Spix, = C. VARIEGATUS E. Geoff.; C. CHRYSOPUS F. Cuv.; C. FATUELLUS (Linn.); C. CIRRIFER, Humb.; *C. lunatus* Kuhl, = C. FRONTATUS Kuhl; *C. cristatus* F. Cuv., = C. CIRRIFER Geoffroy.

Then he states that the variation existing among the species of CEBUS is so extreme that it is practically impossible to designate the species, then reviews those given in his list, compares some with others, and gives the coloring of the pelage.

1840. *R. P. Lesson, Species des Mammifères Bimanes et Quadrumanes.*

The species of CEBUS in this work are arranged in groups according to the way the hair is disposed on the head whether in horns in front upright, or the hair lying flat, or lengthened. The recognized forms are C. CIRRIFER juv.; C. FATUELLUS; *C. buffoni* = C. FATUELLUS; *C. robustus* = C. VARIEGATUS; *C. cucullatus* Spix, = C. VARIEGATUS; C. FRONTATUS; *Sajou trembleur* = *S. trepida*? Linn., undeterminable; C. APELLA; C. CAPUCINUS var. A. B.; *Le Cai* = C. AZARÆ; var. C. C. CAPUCINA; var. D. *C. gracilis* = C. ALBIFRONS; var. E. *C. xanthocephalus* = C. VARIEGATUS; var. F. C. LIBIDINOSUS; *C. hypoleucus* = C. CAPUCINUS; *C. monachus* = C. VARIEGATUS; var. A. *C. xanthosternos* = C. VARIEGATUS; C. CHRYSOPUS; C. ALBIFRONS; *C. brissoni* = C. FLAVUS; var. A. C. UNICOLOR Spix; var. B. *C. fulvus* D'Orb., = C. UNICOLOR; var. albine *C. albus,* albino.

1844. *Tschudi, Fauna Peruana.*

Four species recorded: *C. robustus* (nec Kuhl), undeterminable, possibly = C. MACROCEPHALUS Spix; *C. capucinus* undeterminable; C. ALBIFRONS (Humb.); and C. CHRYSOPUS Cuv.

1845. *Pucheran, in Revue et Magasin de Zoologie.*

C. ALBIFRONS Humb., redescribed as *C. versicolor.*

1847. *Wagner, Königliche bayerische Akademie der Wissenschaften. Abhandlungen der mathematisch-physikalischen Classe.*

CEBUS APELLA (Linn.), redescribed as *Cebus nigrivittatus.*

1848. *Sir R. Schomburgk, Reisen in British Guiana in den Jahren* 1840-44 *Säugethiere.*

C. APELLA (Linn.), redescribed as *C. olivaceus.*

1851. *I. Geoffroy St. Hilaire, Catalogue des Primates.*

Fourteen species of CEBUS are here recorded: C. APELLA (Linn.), (specimen ex Guiana), but with this another species is confounded and united, the C. FATUELLUS (Linn.), and he divides his examples into three varieties or groups: *a.* "Individus à pelage ordinaire, *sans pinceau,*" and group *b.* comprising "Individus semblables au précédents, mais *avec pinceau*"; *c.* "Individus à couleurs semblablement disposées, mais *plus pale.*" These last are those which died in the Menagerie, and whose color has been affected by captivity. Of course group *b.* for which is cited C. FATUELLUS (Linn.), is quite distinct specifically from any form of *C. apella* (Linn.); *C. robustus* Kuhl, = C. VARIEGATUS (E. Geoff.); C. VARIEGATUS (E. Geoff.); C. CIRRIFER (Humb.); C. VELLEROSUS first described; C. FRONTATUS Kuhl; C. ELEGANS I. Geoff.; C. AZARÆ Rengg.; *C. barbatus* E. Geoff., = C. FLAVUS E. Geoff.; C. FLAVUS E. Geoff.; *C. capucinus* E. Geoff., = C. APELLA (Linn.); C. CASTANEUS Geoff., first described; *C. versicolor* Pucher., = C. ALBIFRONS (Humb.); C. CHRYSOPUS F. Cuv.; *C. hypoleucus* (Humb.), = C. CAPUCINUS (Linn.).

1855. *Wagner, Schreber, Die Säugthiere in Abbildungen nach der Natur mit Beschreibungen. Supplementband.*

Ten species and numerous varieties of CEBUS are here recorded, the Author evidently experiencing the same difficulty in distinguishing the specific rank of his specimens as was exhibited in the volume published in 1840. He commences with C. AZARÆ Rengg.; C. FATUELLUS (Linn.), of which as varieties he places *β. C. robustus* Kuhl, = C. VARIEGATUS E. Geoff.; γ. *Sajou cornu* var. à moustaches F. Cuv., = C. FRONTATUS Kuhl; ς. *C. cristatus* F. Cuv., = C. CIRRIFER (Humb.); ε. C. APELLA (Linn. nec Auct.). He then cites *C. elegans* I. Geoff., = C. AZARÆ Rengg.; C. LIBIDINOSUS Spix, a species he does not know, and cites the descriptions; *C. capucinus* Geoff., = C. APELLA (Linn.); *C. olivaceus* Schomb., = C. APELLA (Linn.); *C. hypoleucus* Geoff., = C. CAPUCINUS (Linn.); *C. nigrivittatus* Natter., = C. APELLA (Linn.); *C. gracilis* Spix, = C. ALBIFRONS (Humb.); then follow three species unknown to him, C. ALBIFRONS (Humb.); C. FLAVUS E. Geoff.; and C. CHRYSOPUS F. Cuv.; *C. versicolor* Pucher., = C. ALBIFRONS (Humb.); *C. xanthosternos* Max., = C. VARIEGATUS (E. Geoff.); of which the three following *C. xanthocephalus* Spix, = C. VARIEGATUS Geoff.; *C. monachus* F. Cuv., = C. VARIEGATUS E. Geoff.; and *C. cucullatus* Spix, = C. VARIEGATUS E.

Geoff., are considered synonyms. C. MACROCEPHALUS Spix, is followed by two species unknown to him, C. UNICOLOR Spix, and C. CASTANEUS I. Geoffroy.

1856. *Pucheran, in Bulletin de la Société Philomatique.*
CEBUS ALBIFRONS Humb., redescribed as *Cebus versicolor.*

1857. *Pucheran, in Revue et Magasin de Zoologie et d'Anatomie Comparée.*
A review of some of the specimens of CEBUS in the Paris Museum with critical remarks. The species mentioned are C. APELLA (Linn.); C. VARIEGATUS E. Geoff.; *C. niger* = C. CIRRIFER (Humb.); C. FRONTATUS; C. CASTANEUS I. Geoff.; *C. hypoleucus* = C. CAPUCINUS; C. HYPOMELAS and C. CRASSICEPS both first described; but the first, an individual that died in the Jardin des Plantes Menagerie without any locality, is possibly the same as C. APELLA.

1862. *Reichenbach, Die Vollständigste Naturgeschichte der Affen.*
The following are the species attributed to CEBUS in this work: C. FULVUS Desm.; C. UNICOLOR Spix; *C. gracilis* Gray, = C. UNICOLOR Spix; *C. fistulator* Reichenb., = C. FATUELLUS (Linn.); C. MACROCEPHALUS Spix; *C. robustus* Kuhl, = C. VARIEGATUS E. Geoff.; *C. hypoleucus* Humb., = C. CAPUCINUS (Linn.); *C. capucinus* Auct., = C. APELLA (Linn.); C. LIBIDINOSUS Spix; *C. nigrivittatus* Wagn., = C. APELLA (Linn.); *C. barbatus* E. Geoff., = C. FLAVUS E. Geoff.; *C. albus* an albino; C. APELLA (Linn.); C. CHRYSOPUS F. Cuv.; *C. versicolor* Pucher., = C. ALBIFRONS Humb.; *C. monachus* F. Cuv., = C. VARIEGATUS E. Geoff.; *C. cucullatus* Spix, = C. VARIEGATUS E. Geoff.; *C. capucinus* Auct., = C. APELLA (Linn.); *C. griseus* Desm., = C. APELLA (Linn.); *C. trepidus* undeterminable; *C. paraguayensis* Reichenb., = C. APELLA (Linn.); C. ALBIFRONS Humb.; *C. olivaceus* Schomb., = C. APELLA (Linn.); C. FRONTATUS Kuhl; C. VELLEROSUS I. Geoff.; *C. elegans* I. Geoff., = C. AZARÆ Rengg.; C. AZARÆ Rengg.; C. CIRRIFER E. Geoff.; *C. cristatus* G. Cuv., = C. CIRRIFER E. Geoff.; *C. niger* E. Geoff., = C. CIRRIFER E. Geoff.; *C. lunatus* Kuhl, = C. FRONTATUS Kuhl; C. FATUELLUS (Linn.); *C. hypomelas* undeterminable; C. CRASSICEPS Pucher., and *C. lacépèdii* not a CEBUS. As in his treatment of most of the genera of the Primates, the Author does not exhibit much discrimination in determining the species, but accepts about all the names given by Authors as belonging to valid species.

1865. *J. E. Gray, in Proceedings of the Zoological Society of London.*

A list is here given of the species recognized by the Author in the British Museum. They are arranged in six groups according as the hair of the crown is directed, or forms a crest. I. "Hairs of the crown reflexed, bent back around the face, forming a short crest over each eyebrow." II. "Hairs of the crown bent back, those on the sides of the dark crown spot elongate in the perfect state forming two more or less erect crests or tufts." III. "Hairs of the crown short, reflexed, adpressed, not forming any crest." IV. "Hairs of the crown of the head elongate, erect, forming a single central more or less conical crest." V. "Hairs of the crown radiating from a center; directed forward in front, and forming, with the eyebrows, a transverse crest." VI. "Hairs of the crown elongate, erect, diverging in all directions, forming a kind of cup." Under No. I, one species only is placed, *C. leucogenys* Gray, = C. CIRRIFER (Humb.). With No. II, are arranged, *C. apella* I. Geoff., a composite of C. APELLA (Linn.), and C. FATUELLUS (Linn.); *C. elegans* E. Geoff., which he says = C. *pallidus* Gray, not then described, but Geoffroy's animal = C. AZARÆ Rengg.; C. CIRRIFER (Humb.); C. VELLEROSUS I. Geoff. No. III, has *C. capucinus* I. Geoff., (nec Linn.), = C. APELLA (Linn.); *C. xanthocephalus* Spix, = C. VARIEGATUS; C. VARIEGATUS E. Geoff.; C. ALBIFRONS (Humb.); *C. hypoleucus* = C. CAPUCINUS (Linn.); *C. leucocephalus* Gray = C. ALBIFRONS (Humb.); *C. flavescens* Gray, = C. UNICOLOR Spix. No. IV, includes *C. robustus* = C. VARIEGATUS Geoff.; *C. annellatus* Gray, = C. APELLA (Linn.). No. V, has C. CHRYSOPUS F. Cuv.; *C. subcristatus* Gray, = C. VARIEGATUS Geoff., juv. No. VI, contains only *C. capillatus* Gray, = C. VARIEGATUS I. Geoff., juv. If the manner in which the hair on the crown was directed had been considered from living animals, it might be deemed of more importance as a character, but in this instance many of Gray's specimens were badly prepared, and the hairs greatly disarranged, and in some cases at least, gave a very imperfect and doubtless erroneous idea of how it was worn during the life of the animal, and therefore was not to be relied upon. Gray's knowledge of the species of CEBUS was derived chiefly from the examples in the British Museum, and he nowhere states that he had ever examined a single type of other Mammalogists, and in view of the many errors in his list, his remarks at the beginning of his article have a pathetic force: "The distinction (sic) of the species of the American Monkeys is very difficult, and perhaps the genus Cebus the most difficult of all. Next to the difficulty of distinguishing them is that of determining the names which have been applied to them by various Authors."

1870. *J. E. Gray, List of Monkeys, Lemurs and Fruit-eating Bats, in the Collection of the British Museum.*
The species represented in the National Collection are placed in Section II, Trichiura, Tribe III, Cebina, and arranged into groups according to the color of the fur, or the manner in which the Author supposes the hair was directed upon the crown of the head during the life of the animals; but these methods do not agree in their arrangement for each one contains different species in its group. In his own arrangement he follows the one indicating the growth of hair on the head, as given in his paper in 1865 with its VI groups. No. I contains but a single species, *C. leucogenys* Gray, = C. CIRRIFER (Humb.). II has four species, C. APELLA (Linn.); C. PALLIDUS Gray, first described; C. CIRRIFER (Humb.); and C. VELLEROSUS I. Geoff. III contains six species: *C. capucinus* = C. APELLA (Linn.); and var.? C. LIBIDINOSUS Spix, as a synonym!; *C. xanthocephalus* Spix, = C. VARIEGATUS (Humb.); C. ALBIFRONS (Humb.); *C. hypoleucus* (Humb.), = C. CAPUCINUS (Linn.); *C. leucocephalus* Gray, = C. ALBIFRONS (Humb.); and *C. flavescens* Gray, = C. UNICOLOR Spix. IV has two species: *C. robustus* Max., = C. VARIEGATUS E. Geoff.; and *C. annellatus* Gray, = C. APELLA (Linn.). V has also two species: C. CHRYSOPUS F. Cuv.; and *C. subcristatus* Gray, = C. VARIEGATUS E. Geoff. VI has the remaining species *C. capillatus* Gray, = C. VARIEGATUS E. Geoffroy.

1876. *Schlegel, Muséum d'Histoire Naturelle des Pays-Bas. Simiæ.*
A careful review of the species of Cebus founded upon the examples in the collection of the Museum in Leyden. While recognizing the earlier descriptions of Linnæus' *Simia apella* and *Simia capucinus,* he does not adopt the latter name for *C. hypoleucus* (Humboldt), because in the original description he finds "corpus atrum," while in the Systema Naturæ the body is given as "corpus fuscum." *Atrum,* the Author considers, means sombre, obscure, dark, ("sombre, obscur, ténébreux,") which is contrary to "nigrum" or black, employed to describe the cap on the crown, and therefore does not accurately portray

C. CAPUCINUS (Linn.). The point here made is not tenable, for in the diagnosis of C. CAPUCINUS given in the Mus. Adolph. Fred., Linnæus describes the species as "Simia imberbis *nigra,* cauda longa hirsuta, facie flavescente," and in the fuller description given afterwards "corpus magnitudine cati, atrum pileo laxo longiusculo; at Facies et maxima pars capitis, excepto pileo nigro, pallide flava est una cum pectore ad flexuram usque cubitorum," which is perfectly applicable to *S. hypoleucus* Humboldt, but in no wise answers to the CAPUCINUS Auctores. The first definition the Dictionary gives of *ater* is "black," followed by "coal-black," which sufficiently shows that Linnæus used the words as expressing the same meaning, and *niger* and *ater* in this case are synonymous. In copying the diagnosis of CAPUCINUS into the Systema Naturæ of 1758 and also of 1766, by an oversight it is made to read *"S. caudata imberbis,"* the *nigra* having been omitted, but as the only work cited as a reference is Linnæus' Mus. Ad. Fred., the omission is of little consequence. Schlegel's objection therefore becomes of small importance and CAPUCINUS Linn., must be accepted for the *C. hypoleucus* (Humb.), a name the species has borne erroneously for a century. The list of species commences with *C. hypoleucus* (Humb.), (although E. Geoffroy is given as its author), = C. CAPUCINUS (Linn.); *C. capucinus* E. Geoffroy, = C. APELLA (Linn.); C. ALBIFRONS (Humboldt); *C. barbatus* = C. FLAVUS E. Geoff.; C. APELLA (Linn.), ex Surinam is considered distinct from the one he calls *C. capucinus* from the Guianas = possibly C. CASTANEUS I. Geoff. There seems to be no valid reason for separating examples of C. APELLA (Linn.), from different localities in its range. It is very variable in coloration and all the individuals can only be regarded as representing one species with a considerable dispersion. C. LIBIDINOSUS Spix; *C. niger* E. Geoff., = C. CIRRIFER (Humb.), (synon. Part.); C. FLAVUS E. Geoff.; C. FRONTATUS Kuhl; C. FATUELLUS (Linn.); C. VARIEGATUS E. Geoff.; and *C. fallax,* founded on a skeletal defect, = *C. apella* (Linn.).

1879. *Alston, Biologia Centrali-Americana. Mammalia.*
One species only of CEBUS is here given, *C. hypoleucus* (Humb.), = C. CAPUCINUS (Linn.), with an account of its habits.

1901. *O. Thomas, in Annals and Magazine of Natural History.*
C. FATUELLUS (Linn.), juv. probably, redescribed as *C. fatuellus*

peruanus; and C. UNICOLOR Spix, probably, redescribed as *C. flavescens cuscinus.*

1907. *D. G. Elliot, in Annals and Magazine of Natural History.* CEBUS APICULATUS described.

1909. *D. G. Elliot, in Bulletin American Museum of Natural History, New York.* *Cebus capucinus nigripectus,* and *Cebus malitiosus* first described; and the status of C. CAPUCINUS (Linn.), and C. APELLA (Linn.), explained and fixed.

1910. *D. G. Elliot, in Annals and Magazine of Natural History.* CEBUS VERSUTA and CEBUS CALIGINOSUS described.

GEOGRAPHICAL DISTRIBUTION OF THE SPECIES AND SUBSPECIES.

It must be acknowledged that the geographical distribution of the species of the genus CEBUS is imperfectly known. Much of the vast territory of South America which they inhabit is unexplored, and we are entirely ignorant of the animals to be found in it. A large number of the described species are known only from the type locality, and the range of others is indefinite and unsatisfactory. A serious difficulty also exists in the fact, that it is often uncertain what species a writer is referring to, for although he employs the name of a well known species, he frequently has in mind quite a different one. Hence the confusion and intricacy of the synonymy. Thus the *C. capucinus* of Authors is not the C. CAPUCINUS Linnæus, and the C. APELLA Linnæus, is seldom recognizable in the species given by writers under that name; and the *C. gracilis* Gray is not *C. gracilis* Spix, nor is the *C. robustus* Tschudi, the same species that Kuhl and Wied call by that name. Many examples of this confused nomenclature could easily be given to prove how very difficult it is to accurately establish the species intended, and unless the specimen referred to is extant and accessible, too often a correct decision is impossible. Fully aware, therefore, of the great limitation to our knowledge, the writer can only attempt to give the restricted boundaries of the dispersion of the CEBI which have been ascertained at the present time. The most northern habitat of any species is Central America, and there, from and including Nicaragua to Panama, C. CAPUCINUS is found ranging, and also into northern South America to Colombia. To the north of Nicaragua no species of CEBUS is found. In the three Guianas: English, Dutch and French, C. APELLA (Linn.), dwells, and from Cayenne in French Guiana C. CASTANEUS was brought, its type locality and range however unknown.

From Bolivia C. FLAVUS comes, but the extent of its range is unknown. On the eastern coast of Brazil, from Bahia to north of Rio de Janeiro, C. VARIEGATUS occurs; and in the forests of the Orinoco, and also in those of the Amazon with its tributaries the Rio Negro, Rio Teffé, Rio Madeira and Rio Japurá, and in the Peruvian Province of Mainas, C. ALBIFRONS is met with. In the forests of the Rio Teffé C. UNICOLOR has been procured; and west of the mouth of the Rio Negro, C. MACROCEPHALUS is found. In the Brazilian Province of Minas Geræs in the western part of the Rio Jordao C. VERSUTA dwells; and in the same Province in the forests watered by the Rio Carinainha, C. LIBIDINOSUS occurs. In the Province of Sao Paulo, three species have been observed: C. CIRRIFER at Ypanema, south to New Fribourg between the Rio Parahyba and Rio de Janeiro; C. CALIGINOSUS in the vicinity of St. Catarina, and C. VELLEROSUS the precise locality of which is unknown. In the Province of Paraguay, the most southern district in which any species is found, C. AZARÆ occurs, extending its range north westward into Matto Grosso west of the Rio Parana, and according to Burmeister, (l. c.) into Bolivia. On the Lower Orinoco near La Union, and at Marino on the Rio Caura, and also on the Rio Mocho, a tributary of the Upper Rio Caura in Venezuela, C. APICULATUS has been obtained. On the Pacific coast in Colombia, locality unknown, C. CHRYSOPUS was procured; and near Bonda, C. MALITIOSUS was found; while in the Cauca Valley *C. c. nigripectus* was taken; and in the mountains and in the forests of the Upper Magdalena at an elevation of from 5,000 to 7,000 feet, C. FATUELLUS dwells. Peru has *C. azaræ pallidus* taken near Santa Anna, and in the Province of Cuzco; and near Callanga, *C. unicolor cuscinus* was obtained. In southeastern Peru near Marcopata in the Inambari Valley *C. fatuellus peruana* is found. Two species remain whose habitat is as yet unknown: C. CRASSICEPS, supposed to come from the Rio Negro forest, and C. FRONTATUS which may possibly occur near Ypanema in the Province of Sao Paulo, Brazil.

KEY TO THE SPECIES AND SUBSPECIES.

A. Head without tufts on male.
  a. Arms without yellow.
    a.′ Hairs on body without yellow.
      a.″ Crown and line on side of face black, sides of head beneath the ears yellowish white ....*C. apella.*

        - *b.*″ Crown black, cheeks whitish.
            - *a.*‴ Arms to elbows white.
                - *a.*^{4} Chest white .... *C. capucinus.*
                - *b.*^{4} Chest black .... *C. c. nigripectus.*
        - *c.*″ Crown black, cheeks pale yellow ...... *C. frontatus.*
        - *d.*″ Crown white .... *C. albifrons.*
        - *e.*″ Crown pale brownish yellow tinged with reddish .... *C. unicolor.*
        - *f.*″ Crown dark chestnut .... *C. u. cuscinus.*
        - *g.*″ Crown golden brown .... *C. flavus.*
- *b.* Arms with yellow.
    - *a.*′ Arms to elbows, and shoulders golden yellow .... *C. castaneus.*
    - *b.*′ Arms to elbows yellowish white .... *C. variegatus.*
    - *c.*′ Arms to wrist on outer side pale yellow.
        - *a.*″ Upper parts mummy brown .... *C. malitiosus.*
        - *b.*″ Upper parts cinnamon red .... *C. chrysopus.*
        - *c.*″ Upper parts blackish brown .... *C. apiculatus.*

B. Heads with tufts or ridges on male.

- *a.* No white hairs on body.
    - *a.*′ Arms with yellow.
        - *a.*″ Dorsal region dark yellowish brown.. *C. libidinosus.*
        - *b.*″ Dorsal region reddish chestnut....... *C. fatuellus.*
        - *c.*″ Dorsal region reddish golden brown .... *C. macrocephalus.*
    - *b.*′ Arms without yellow.
        - *a.*″ Arms to elbows cream buff .... *C. versuta.*
        - *b.*″ Arms to elbows reddish chestnut.. *C. f. peruanus.*
        - *c.*″ Arms to elbows dark Prout's brown.
            - *a.*‴ Black cap on head .... *C. azaræ.*
            - *b.*‴ Black cap divided nearly into two. *C. a. pallidus.*
        - *d.*″ Arms to elbows black.
            - *a.*‴ Upper parts mummy brown...... *C. cirrifer.*
            - *b.*‴ Upper parts chestnut red ...... *C. crassiceps.*
        - *e.*″ Arms to elbows golden brown tinged with red .... *C. caliginosus.*
- *b.* White hairs on body .... *C. vellerosus.*

CEBUS APELLA (Linnæus).

Simia apella Linn., Mus. Reg. Ad. Fred., 1754, Quad., p. 3, pl. I; *Id.* Syst. Nat., I, 1758, p. 28; I, 1766, p. 42; Bodd., Elench.

Anim., 1784, p. 62; Gmel., Syst. Nat., I, 1788, p. 37; Audebert, Hist. Singes et Makis, 1797, Fam. X, Sec. III, p. 3, pl. II; and var. A. p. 4, pl. III.

Cebus apella Erxl., Syst. Reg. Anim., 1777, p. 50; Kuhl, Beitr. Zool., 1820, p. 36; Fisch., Syn. Mamm., 1829, p. 47; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 207; Blainv., Ostéog., 1841, Atl., Cebus, pl. II; I. Geoff., Cat. Primates, 1851, p. 41; Casteln., Expéd. Amér. Sud, Zool., 1855, p. 9; Flow., Proc. Zool. Soc. Lond., 1862, p. 230; Gray, Proc. Zool. Soc. Lond., 1865, p. 826; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 19, (specimens ex Guianas); Elliot, Bull. Amer. Mus. Nat. Hist., N. Y., 1909, p. 227; Thos., Proc. Zool Soc. Lond., 1911, p. 128.

Cebus capucinus (nec Linn.), Erxl., Syst. Reg. Anim., 1777, p. 48; E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 111; Kuhl, Beitr. Zool., 1820, p. 36; Desm., Mamm., 1820, p. 85; Fisch., Syn. Mamm., 1829, p. 49; Less., Spec. Mamm., 1840, p. 145; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 208; V, 1855, p. 87; I. Geoff., Cat. Primates, 1851, p. 46; Reichenb., Vollständ. Naturg. Affen, 1862, p. 34, pl. VI, fig. 95; pl. VII, fig. 114; Elliot, Bull. Am. Mus. Nat. Hist., N. Y., 1909, p. 228.

Simia (*Sapajus*) *trepidus fulvus* Kerr, Anim. Kingd., I, 1792, Mamm., No. 69.

Simia (*Cebus*) *apella* Humb., Rec. Obs. Zool., I, 1811, (1815), p. 355.

Cebus griseus Desm., Mamm., 1820, p. 81.

Cebus nigrivittatus Wagn., Königl. Bayer. Akad. Wiss. Abhandl. Math. Phys. Classe, V, 1847, p. 430; *Id.* Schreb., Säugth. Suppl., V, 1855, p. 88.

Cebus olivaceus Schomb., Reis. Guian., II, 1848, p. 246; III, p. 770 a.?; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 87, pl. VIII.?

Cebus fatuellus var. E. apella Wagn., Schreb., Säugth. Suppl., V, 1855, p. 84.

Cebus pucherani Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 161, 165.

Cebus hypomelas Pucher., Rev. Mag. Zool., 2me Sér., 1857, p. 341.

Cebus (*Eucebus*) *griseus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 40, fig. 115.

Cebus (*Calyptrocebus*) *paraguayanus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 41, pl. VII, fig. 118.

Cebus (*Calyptrocebus*) *olivaceus* Reichenb. Vollständ. Naturg. Affen, 1862, p. 42, pl. VII, figs. 106, 107; pl. VIII, fig. 122.

Cebus (*Calyptrocebus*) *apella* Reichenb., Vollständ. Naturg. Affen, 1862, p. 56, pl. VII, figs. 103-107.

Cebus (*Calyptrocebus*) *nigrivittatus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 56, pl. VI, fig. 99; pl. VIII, fig. 123.

Cebus annellatus Gray, Proc. Zool. Soc. Lond., 1865, p. 827; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 51; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 194; Forbes, Handb. Primates, I, 1894, p. 213.

Cebus fallax Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 210. (Example of C. APELLA with skeletal defect).

WEEPING CAPUCHIN.

Type locality. Surinam, or Dutch Guiana.

Geogr. Distr. English, Dutch and French Guianas.

Genl. Char. Black cap on head, white spot on temple and white line on forehead. This may be considered the typical style. In other examples the white extends backward, often leaving only a narrow black line on the forehead.

Color. Top of head, and line on sides of face meeting under chin, black; whitish spot on temples; upper parts and thighs Vandyke brown; dorsal region blackish; forearms, legs, feet and tail black; no tufts on ears; sides of head below ears, upper lip and under parts yellowish white, sometimes with a golden tinge; inner side of arms and legs black.

Measurements. Skull: occipito-nasal length, 79; Hensel, 64; zygomatic width, 61; intertemporal width, 40; median length of nasals, 9; length of upper molar series, 20; length of mandible, 57; length of lower molar series, 24. Vertebræ: Cervical, 7; Dorsal, 14; Lumbar, 5; Sacral, 3; Caudal, 23-27.

The SIMIA APELLA Linnæus as described and figured in the Museum Regis Adolphi Frederici, p. 1, pl. I, 1754, is the animal known generally to Authors as *Cebus capucinus.* Under that species I have demonstrated (l. c.) that the CAPUCINUS Linn., was the animal afterward named by Humboldt *hypoleucus,* and consequently the *capucinus* of Authors was a misnomer.

Linnæus' description and plate of this species in the work above cited, though not so clearly demonstrable perhaps as in the case of his CAPUCINUS, leave little room for doubt that APELLA was applied to the familiar monkey known to all as the typical Capuchin, the one with the "colore fuscum, sive griseo nigricans uti martes, at pedes et cauda nigra"; also, "sub mento vellus breve, densum, atrum, pingue," one of the characters of *capucinus* Auct. The general description given in the Mus. Reg. Ad. Fred., exactly covers *capucinus* Auct., and the plate gives most of the characteristic markings, such as the black cap on the head extending down the sides of the face and under the chin, and the black hands, feet and tail. In both editions of the Systema Naturæ, 1758 and 1766, the Mus. Reg. Ad. Fred. is the only work cited, and the descriptions are too brief to determine the species, while that in the work, where the form was first named, is fairly comprehensive.

Cebus annellatus Gray, the type of which is before me, appears to be nothing but what I call *apella* Linnæus, *capucinus* of Authors, in one of its many varietal colorations. The yellowish white of the temple extends to the top of the head leaving but a narrow black line down the center. The body is pale reddish, the limbs and under parts, tail, hands and feet like ordinary *apella.* Mindful of the immense diversity of color exhibited by this species, which is dependent neither upon locality, age nor sex, but is simply individual, I have no hesitation in referring Gray's type to the present species and include its name among the synonyms.

Cebus olivaceus Schomburgk (l. c.). The description given of this form, seems nearest to C. APELLA, but there are discrepancies such as "Ausnature der Schultern und Oberarme, die strogelb aussehn," which leans more towards C. FATUELLUS (Linn.), for I do not recall any specimen of C. APELLA at any age with the upper part of arms *straw-yellow.* This part is often very light colored and sometimes in immature animals approaches a yellowish tinge, but never so far as I have seen a *straw-yellow.* But as the greater part of Schomburgk's description is nearer C. APELLA (Linn.), than it is to any other species, and C. FATUELLUS (Linn.), is a native of the western part of the continent, I have placed it among the synonyms of the former species but with an interrogation mark, for I know no other species from the Guianas to which it can be referred.

The type of *Cebus hypomelas* Pucheran, is in the Paris Museum, and while the upper parts are Prout's brown, the flanks are redder or more russet than is usually seen in typical C. APELLA, yet mindful of how the species varies in coloration, it seems best to refer Pucheran's type to the older known form. The type has no history beyond what is written on the bottom of the stand "Acheté à M. Perdrinelli le 8 février 1854, mort à la Ménagerie le 11 février, 1854." It therefore lived only three days after its purchase. Its patrie is quite unknown.

It would seem to be a rather brightly colored C. APELLA, with under parts Prout's brown.

Color. Forehead and sides of head in front of black stripe brownish black, the hairs being buffy at base, rest brownish black, the buff showing through slightly; rest of head and nape black; a black band in front of ears goes from top of head and meets under the chin; dorsal region Prout's brown; sides of body russet, this color also extending on to the arms above shoulders, and on thighs; forearms, hands, front of thighs, legs below knees, feet and tail jet black; under parts Prout's brown with a reddish tinge. Ex Pucheran's type of *C. hypomelas.*

C. fallax Schlegel is an immature individual, not fully grown, and with a skeletal defect, as there are but four lumbar vertebræ instead of five or six. The specimen was brought alive to Europe, its habitat unknown and died May 1, 1875. In color it is like C. APELLA and cannot be separated from that species.

CEBUS CAPUCINUS (Linnæus).

Simia capucina Linn., Mus. Reg. Ad. Fred., 1754, p. 2, pl. II; *Id.* Syst. Nat., I, 1758, p. 29; I, 1766, p. 42; Schreb., Säugth., I, 1775, p. 120, pl. XXIX; Gmel., Syst. Nat., I, 1788, p. 37; Audeb., Hist. Nat. Singes et Makis, 1794, p. 5, pl. IV, var. a, (not typical); p. 6, pl. V, var. a; Elliot, Bull. Am. Mus. Nat. Hist., N. Y., 1909, p. 228.

Simia (*Sapajus*) *capucinus albulus* Kerr, Anim. Kingd., I, 1792, Mamm., No. 73.

Simia hypoleuca Humb., Rec. Obs. Zool., I, 1811, (1815), p. 337.

Cebus hypoleucus E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 111; Kuhl, Beitr. Zool., 1820, p. 37; Desm., Mamm., 1820, p. 85; Fisch., Syn. Mamm., 1829, p. 50; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 208; V, 1855, p. 88; I. Geoff., Cat. Primates, 1851, p. 47; Pucher., Rev. Mag. Zool., 1857, p. 346; Gray, Proc. Zool. Soc. Lond., 1865, p. 826; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 190; Alston, Biol. Amer. Centr., I, Mamm., 1879, p. 13; Elliot, Mamm. Middle Amer. and W. Ind., Field Columb. Mus. Pub., IV, Pt. II, 1904, p. 736, figs. 167, CLXII, Zool. Ser.; *Id.* Cat. Mamm. Field Columb. Mus., VIII, 1906, p. 262, fig. LXXXV, Zool. Ser.

Cebus (*Calyptrocebus*) *hypoleucus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 33, pl. VI, figs. 93, 94.

Cebus albifrons (nec Humb.), Belt, Nat. Nicar., 1874, p. 118.

Cebus imitator Thos., Ann. Mag. Nat. Hist., 7th Ser., XI, 1903, p. 396; Elliot, Mamm. Middle Amer. and W. Ind., Field Columb. Mus. Pub., VI, 1905, p. 596, Zool. Ser.

Cebus capucinus Elliot, Bull. Am. Mus. Nat. Hist., N. Y., XXVI, 1909, p. 227; Thos., Proc. Zool. Soc. Lond., 1911, p. 128.

WHITE-THROATED CAPUCHIN. Mono Carablanca, native name.

Type locality. None given.

Geogr. Distr. Nicaragua to Colombia.

Color. Face flesh color; forehead, cheeks, sides of head to behind ears, chin, throat, sides of neck, chest and shoulders, sometimes on arms nearly to elbows, white or yellowish white; rest of body, limbs, hands, feet and tail black.

Measurements. Total length about 1,000; tail, 500; foot, 120. Skull: occipito-nasal length, 86; Hensel, 61; zygomatic width, 60; median length of nasals, 16; palatal length, 30; length of upper molar series, 21; length of mandible, 51; length of lower molar series, 26.

Simia CAPUCINA Linnæus has been generally recognized by Authors as the monkey with the sides of face, throat, chest and front part of the shoulders grayish yellow, or grizzled, (gray and black). In the Museum Regis Adolphi Frederici, 1754, the work in which Linnæus first employed the binominal system, two species of CEBUS are figured and described as *Simia* APELLA and *Simia* CAPUCINA. The plates are recognizable, that on which the latter species is portrayed eminently so, and represent the forms recognized by Authors generally as CEBUS CAPUCINUS and *Cebus hypoleucus,* and the descriptions given, fairly, if not completely, describe the figures, and the one known to Mammalogists at the present day as *Cebus hypoleucus* is called *S.* CAPUCINA, and the other *S.* APELLA, and these names must take precedence for these forms. In the 10th edition of the Systema Naturæ, 1758, p. 29, Linnæus gives a brief description of *S.* CAPUCINA, not sufficient however to cause the form to be recognizable, but the only authority he gives is his own work the Mus Reg. Ad. Fred., which thus fixes the animal, (afterwards named by Humboldt *hypoleucus*), as his *S.* CAPUCINA. In the 12th edition of the Systema Naturæ, 1766, p. 43, the one cited by many European Naturalists, under *S. capucina,* Linnæus gives quite a different description of this monkey from that in the Mus. Reg. Ad. Fred., and instead of "pallida flava est una cum pectore ad flexuram usque cubitorum" as exhibited in the figure of his plate, he writes *"pectus ferrugineum,"* which describes neither *capucinus* nor *hypoleucus* of Authors. It is on account of having thus altered his original description, a custom not unusual with Linnæus, and the fact that the 12th edition of the Systema Naturæ is the only one consulted and cited by many naturalists, that confusion has arisen with the name of this species and the wrong one attributed to it, a name Linnæus only applied to the animal generally known to-day as *Cebus hypoleucus,* but which in the future must be called CEBUS CAPUCINUS. The original description like all given by Linnæus is brief, but emphasizes the characters of the Monkey afterwards called *hypoleucus,* and if this is not considered sufficient evidence, the plates exhibit unmistakably, that Humboldt's species was the one Linnæus originally called CAPUCINUS. The subject is fully discussed in a paper by the writer published in the Bulletin of the American Museum of Natural History for 1909.

Schlegel has added to the confusion connected with these animals by separating the species from the Guianas, C. APELLA into two, to one of which he gives the name, *capucinus,* although he was fully aware that it was a black and white monkey which was so designated by Linnæus.

C. capucinus Tschudi, Faun. Peruan., p. 42, is difficult to characterize from his short and unsatisfactory description. It is not *C. capucinus* (Linn.), for that species is never "dunkelbraun" or "rötlich braun" on any part of its body at any age, and "die Kehle, die Brust, der Bauch und die innere Seite der Extremitäten sind weisslich gelb" does not describe C. APELLA (Linn.), very well, nor will it answer for any stage of C. FATUELLUS (Linn.). Besides, the latter species is not actually known to be found in Peru, nor is the description suitable for C. FLAVUS E. Geoff., from Bolivia. It would seem therefore that *C. capucinus* Tschudi (nec Linn.), must be relegated to the list of undeterminable species of the genus CEBUS.

From an examination of the series of *C. imitator* Thos., from Boquete, in the British Museum, it would hardly seem that the specimens possessed sufficient characters to warrant their separation from the typical form. Four females, all there are of this sex, have the hair on the forepart of the head much longer than the rest forming a sort of bushy tuft, and this is not confined to any particular season of the year. The examples were procured at a rather high elevation, 4,000 to 4,500 feet, and long hair and thick fur would naturally constitute the coats of animals living at that height; but if a low temperature was the cause of the existence of these tufts the males should also possess them, but they do not and are quite indistinguishable from other members of C. CAPUCINUS throughout its range.

There are seven males all with the hair short and lying flat on the head like the typical form. In the absence of any other character to support a distinctive rank, the skulls also showing none, it would seem proper to consider *imitator* as a synonym of C. CAPUCINUS. That this peculiarity of bushy tufts on the heads of the females only is not restricted to this animal, the males not possessing them, is seen in the females of the species I have called C. APICULATUS, which have tufted heads, the males not. This fact alone with no other characters, would hardly be deemed sufficient for the examples to be given a distinct specific rank.

Belt, who met with this species in Nicaragua, says (l. c.) that sometimes a troop of the White-faced Cebus would be met rapidly running away, throwing themselves from tree to tree. It feeds on fruits, but is also constantly searching for insects in the crevices in trees and among withered leaves, and the largest beetles are seized and munched with avidity. It also is very fond of eggs and nestlings. It is an intelligent and mischievous animal, and he had one as a pet for a long time, whose antics were very amusing. At first it was kept chained but it would open the links and go directly to the nests of the fowls, and break every egg it could get; after a day or two it would permit itself to be captured.

When there were young ducks about, it would hold out a piece of bread in one hand and a duck being tempted to approach within its reach, it would seize it with the other and kill it by biting the breast.

When any one fondled him, he would pick his pockets diligently, pulling out letters and taking them from the envelopes, and anything eatable at once disappeared in his mouth. Once he took a bottle of turpentine from the pocket of a medical officer, drew the cork, held it first to one nostril, then the other, made a wry face, recorked it and returned it to the doctor. When he was about to be punished for some of his misdeeds, he would try to intimidate by uttering a shrill threatening note and showing his teeth. His notes varied from a gruff bark to a shrill whistle and by them his owner could tell whether he was hungry, or eating, frightened or menacing, even without seeing him. Once near Juigalpa, Belt saw a troop of this species on the ground among low scattered trees. Their attitudes were amusing as some stood upright trying to get a better view of the intruder, while others arched their backs like cats. They remained quite still, watching, but a few steps towards them sent them scampering away, barking. Belt misnames them *C. albifrons,* but that species is not found in Central America.

CEBUS CAPUCINUS NIGRIPECTUS Elliot.

Cebus capucinus nigripectus Elliot, Bull. Am. Mus. Nat. Hist., N. Y., 1909, p. 229; Allen, Bull. Am. Mus. Nat. Hist., N. Y., XXXI, 1912, p. 95.

Type locality. Las Pubas, Cauca Valley, Colombia. Type in American Museum Natural History, New York.

Genl. Char. Forehead bistre, chest black. Upper molar series small.

Color. Sides of head and neck, chin, throat, shoulders and outer side of upper arms yellowish white; forehead bistre; top of head, back of neck, chest, body above and beneath, lower arms, legs, hands, feet and tail jet black.

Measurements. Total length, 835; tail, 430; foot, 120; ear, 30, (Collector). Skull: occipito-nasal length, 89; zygomatic width, 53.8; width of braincase above root of zygoma, 52; length of braincase from margin between orbits, 75.1; Hensel, about 68.5; skull broken; length of upper molar series, 32.1; width of last molar, 35; length of mandible on lower margin, 44.9; width at symphysis, 13.7; height of ascending ramus, 28.5; length of lower molar series, 25.9.

While resembling the typical C. CAPUCINUS (Linn.), in general appearance this species differs in the color of the forehead which is bistre, and not white nor yellowish white, and also in the black chest, the white of the throat not extending downward. The skull also differs, in having a longer braincase, and is not wide over root of zygoma as is the skull of C. CAPUCINUS (Linn.). The orbits are smaller, the nasals narrower and the teeth of the upper molar series much shorter, the last molar being about half the size of m^1 and appearing minute when compared with the other molars.

The Collector, the late J. H. Batty, stated that this monkey was not found in low lands, but is a mountain species, a sagacious and shy animal, and an expert jumper.

CEBUS FRONTATUS Kuhl.

Cebus frontatus Kuhl, Beitr. Zool., 1820, p. 34; Desm., Mamm., 1820, p. 32; I. Geoff., Cat. Primates, 1851, p. 44; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 161, 166; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 206, (Part.); von Pelz., Zool.-Bot. Ges. Wien, 1883, Beiheft, p. 13; Goldi, Mamm. Bras., 1893, p. 41, (note).

Cebus lunatus Kuhl, Beitr. Zool., 1820, p. 37, juv.; Desm., Mamm., 1820, p. 84; Temm., Mon. Mamm., 1827. p. XV; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 209.

Cebus (Otocebus) lunatus Reichenb., Vollständ. Naturg. Affen, 1862, p. 45, pl. VIII, figs. 132, 133.

Cebus (Otocebus) frontatus Reichenb., Vollständ. Naturg. Affen, 1862, p. 43, pl. VII, fig. 112; pl. VIII, fig. 125.

Variété du Sajou Cornu F. Cuv., Hist. Mamm., IV, 1881, pl.

Type locality. None given. Type in Paris Museum.

Geogr. Distr. Patrie unknown. Ypanema,? Province of Sao Paulo, Brazil.

Genl. Char. No tufts on head; hairs on forehead and sides of head standing upright.

Color. Superciliary line, temples, cheeks to corners of mouth pale yellow; chin whitish; top of head to nape and a narrow line down sides of face, meeting under the chin, black; upper parts of body, arms and hands glossy Prout's brown; legs and feet brownish black; tail black with reddish hairs intermingled at base; inner side of limbs blackish; chest and throat grayish; abdomen blackish brown. Ex probable type Paris Museum.

The words "C. frontatus nobis" on the stand of the example in the Paris Museum is said to be in Kuhl's handwriting and designates the type; but nowhere is it said to be "type de l'espèce," which is almost always written on the stands when any particular specimen is indicated as THE type. The example bears no resemblance whatever to C. CRASSICEPS, and which Schlegel includes with this species as a synonym of C. VARIEGATUS, but is very like the type of C. CIRRIFER E. Geoff., but has not the long head tufts of that species. The hair on the top of the head is long and stands upright, and is longest on the forehead. The tail is not so bushy as is that of C. CIRRIFER, and is black with reddish hairs mixed on the basal part. In size this species equals the ordinary Capuchin.

The type of *C. lunatus* Kuhl, is now in the Leyden Museum having been obtained in exchange from the Heidelberg Museum. It is a young animal in the brown coat, has a black head, and is evidently in process of change to the adult dress, and cannot be separated specifically from the present species. It must however be confessed that the distinctness of *C. frontatus* is doubtful. Its resemblance to C. CIRRIFER, (differing chiefly in wanting the head tufts, which may be a mark of age or of season), and our total lack of knowledge of the country from whence it came give it a very disadvantageous position among the species of CEBUS. This is the more remarkable, for it is nearly a century since it was described, and yet we are still waiting for more material which will show what status this type specimen should have among the species.

CEBUS ALBIFRONS (Humboldt).

Simia (*Cebus*) *albifrons* Humb., Rec. Obser. Zool., I, 1811, (1815), pp. 323, 356.

Cebus albifrons E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 111; *Id.* Cours Hist. Nat. Mamm., 1828, p. 9, 10me Leçon; Kuhl, Beitr. Zool., 1820, p. 34; Desm., Mamm., 1820, p. 83; Fisch., Syn. Mamm., 1829, p. 50; Less., Spec. Mamm., 1840, p. 154; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 208; V, 1855, p. 93; Tschudi, Faun. Peruan., 1844, p. 42; Bates, Nat. Riv. Amaz., 1863, II, p. 101; Gray, Proc. Zool. Soc. Lond., 1865, p. 826; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 50; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 195; Forbes, Handb. Primates, I, 1894, p. 213.

Cebus gracilis Spix, Sim. et Vespert. Bras., 1823, p. 8, pl. V; Wagn., Abhandl. Bayer. Akad. Münch., V, 1848, p. 426; *Id.* Schreb., Säugth. Suppl., V, 1855, p. 90.

Cebus leucocephalus Blainv., Ostéog., 1840, Atl., Cebus, pl. V; *Gray, Proc. Zool. Soc. Lond., 1865, p. 827; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1876, p. 50; Sclat., Proc. Zool. Soc. Lond., 1872, p. 4.

Cebus versicolor Pucher., Bull. Soc. Philom., 1856, p. 34.

Cebus (*Calyptrocebus*) *gracilis* Reichenb., Vollständ. Naturg. Affen, 1862, p. 30, pl. VI, fig. 85.

Cebus (*Calyptrocebus*) *albifrons* Reichenb., Vollständ. Naturg. Affen, 1862, p. 42, not figured.

WHITE-FRONTED CAPUCHIN. Caiarára, native name.

Type locality. Mission of Santa Barbara, Cataracts of the Orinoco.

Geogr. Distr. Forests of the Orinoco, and of the Amazon and its tributaries, Rio Negro, (Bates); Rio Japura and Rio Teffé, (Spix); near Borba, Rio Madeira, (Natterer); Colombia, (Plée and Schlegel); Province of Minas, Peru, (Tschudi).

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*Gray states that this is not C. ALBIFRONS Geoff., but his description gives no difference.

Genl. Char. Size large, tail very long, bushy; head and body of strongly contrasting colors.

Color. Forepart of head, throat, chest and back of head white; upper parts grayish red to reddish brown, dorsal line and rump darker red in some examples; limbs brighter red than the body; hands and feet dark reddish brown or blackish; under parts dull reddish; tail varying from fox red or grayish red at base, to yellowish red or sooty yellow at tip. In some specimens the red of the back of the head extends forward in a point on the white crown.

Measurements. Skull: occipito-nasal length, 80; Hensel, 57; zygomatic width, 60; intertemporal width, 40; median length of nasals, 13; length of upper molar series, 21; length of lower molar series, 21; length of mandible, 55.

Gray's type of *C. leucocephalus* is in the British Museum, mounted. It is a large monkey and answers in all respects to the description of Humboldt's species, save the breast, but as the hair has disappeared from this part it is not possible to say what the coloring was originally, but as the rest of the animal accords with C. ALBIFRONS it would doubtless be white like the greater part of the head.

There are two specimens of *C. gracilis* Spix, in the Munich Museum both marked 'Types,' both young animals, but one considerably younger than the other. They have probably faded somewhat for they are paler than Spix's figure but that may have been over colored. In their markings and general distribution of hues these examples resemble C. ALBIFRONS (Humboldt), and cannot be separated from that species.

The type of *C. versicolor* Pucheran, and another specimen are in the Paris Museum, the type much darker and richer in color of the two. It does not present any characters to cause its separation from C. ALBIFRONS, the fact that there is no specimen in the Museum bearing that name, probably was the main cause for Pucheran having been misled and made to suppose he had an unknown species before him. The type is somewhat darker, and the limbs a deeper red than is seen in the majority of specimens, but the other example is much paler and has, evidently, not yet suffered by exposure to light. The total length is 1,229.90; tail, 673.80; foot, 114.30. The skull, as is the case with so many of the types in the Paris Museum, is in the specimen, and no comparisons can be made or measurements taken; and it would seem that the earlier writers did not look for cranial characters by which their species might be determined, but relied, apparently, almost altogether upon the colors exhibited by their examples; too often a broken reed to lean upon, especially when endeavoring to establish a new species of the genus Cebus. That these monkeys varied among themselves in color to an incredible degree was not known nor understood, hence the long list of synonyms that now accompanies the names of many species.

Bates found this monkey on the lower part of the Rio Tapajos, where it is pretty generally distributed through the forests of the level country. He saw it often also on the banks of the Upper Amazon, and used to watch it leaping among the trees, as it is a wonderful performer in this line of gymnastics. The troops travelled in a single file of thirty or more individuals, and when the leader reached the end of a branch of a lofty tree he at once sprang into the air, and alighted on the yielding foliage of another tree maybe fifty feet below; all his companions following closely behind. As they alight they seize the branches with hands and tail, steady themselves an instant and are off again over the branches to the next tree. Bates kept one as a pet for about a year, which went with him on his journeys and became very familiar, sharing his blanket on wet nights. While restless, it was not playful, its inability to remain quiet arising from a nervous irritability and discontented disposition, and these were exhibited by the painful, changeable expression of its countenance, and general lack of purpose. Its actions were those of a wayward child, and it was not happy even with plenty of its favorite food, bananas, but would leave its own meal to snatch morsels from the hands of its companions. The *Caiarára* kept the house in a perpetual uproar, for it screamed whenever alarmed or hungry or jealous; but no matter what the trouble might be it was always making some kind of a noise, screwing up its lips and uttering a succession of loud whistling notes. It would follow its master, when loose, supporting itself upright on its legs. One day in a fit of jealousy it quarrelled with an owl-faced monkey (*Nyctipithecus trivirgatus*), over a fruit some one had given the latter. *Nyctipithecus* fought only with its paws and hissing like a cat, but the *Caiarára* obtaining the mastery cracked the other's skull with its teeth and killed it. Thereupon Bates got rid of it. It is difficult to suppose that this individual was a fair representative of its species, but rather had, unfortunately, a disagreeable, irritable disposition not often met with among its relatives. However it is well known that all monkeys are jealous, and when aroused by that regrettable passion are capable of going to any extreme of violence, and at such times are best left to themselves.

CEBUS UNICOLOR Spix.

Cebus unicolor Spix, Simiar. et Vespert. Bras., 1823, p. 7, pl. IV; Fisch., Syn. Mamm., 1829, p. 48; Less., Spec. Mamm., 1840, p. 155; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 207; V, 1855, p. 98.

Cebus gracilis Gray, List Spec. Brit. Mus., 1843, p. 12, (nec Spix, desc. nulla).

Cebus (*Pseudocebus*) *unicolor* Reichenb., Vollständ. Naturg. Affen, 1862, p. 30, fig. 84.

Cebus flavescens Gray, Proc. Zool. Soc. Lond., 1865, p. 827, juv.; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 51; Forbes, Handb. Primates, I, 1894, p. 217.

PALE CAPUCHIN.

Type locality. Egà on the River Teffé, Brazil. Type in Munich Museum.

Geogr. Distr. Forests of the Rio Teffé, Brazil.

Color. Forehead and sides of head, flanks, limbs and under parts of body, pale yellow; hinder parts of crown and nape, dorsal region, and rump, reddish brown; hands and feet pale reddish brown; tail and hinder part of thighs, rump and about tail, mars brown. Ex type in Munich Museum.

Measurements. Total length, 850; tail, 300; foot, 133. Ex type Munich Museum. Skull in specimen.

Spix's type is, as the measurement shows, a rather large monkey for a member of the genus CEBUS. In general appearance it is a pale yellowish animal tinged in places with reddish, or reddish brown, and with a reddish tail. It is in only a fair degree of preservation, and has lost considerable hair on various parts of the body. The open mouth of the specimen shows the teeth which are remarkable for the great length of the canines. Spix's figure is a fair representation of the species but is too red, at least as the specimen is to-day. It may possibly have faded. According to Spix the specimen came from the forest bordering the River Teffé near the village of Egà.

The type is, apparently, the only specimen he procured. It does not resemble very closely any of the species of CEBUS, but perhaps is nearer to C. VARIEGATUS than any other though much lighter in color.

Gray's type of C. *flavescens* is quite immature, probably not more than three fourths grown, and it would be a very unsatisfactory representative of a species if distinct from all others, which happily it is not. It is doubtless a young individual of C. UNICOLOR Spix, and therefore Gray's name must become a synonym. An example like this without a history, its habitat unknown, and lacking even a single character to separate it from a species described twenty years before, is a source of confusion and perplexity to all investigators who are unable to have personal knowledge of it. The practice of giving names to such specimens, in which Gray was frequently an offender, is especially reprehensible when indulged in with such a genus as CEBUS, whose members exhibit extreme variation in the colors of their coats, surpassed possibly by no other group of mammals, save, perhaps, the squirrels of Mexico.

The type of *C. flavescens* is in the British Museum, and may be described as follows: crown, nape and dorsal region, pale brownish yellow tinged with reddish on lower back; sides of head, flanks, limbs, under parts and tail pale yellow, tinged with reddish on outer side of arms, thighs and upper side of tail; hands and feet reddish brown.

CEBUS UNICOLOR CUSCINUS Thomas.

Cebus flavescens cuscinus Thos., Ann. Mag. Nat. Hist., VII, 7th Ser., 1901, p. 179; Festa, Boll. Mus. Torino, 1903, p. 6.

Type locality. Callanga, Cuzco, Peru. Type in British Museum.

Genl. Char. Closely allied to C. UNICOLOR Spix, but with a large brown coronal patch.

Color. Forehead and cheeks yellowish brown; crown and nape dark chestnut; base of hairs pale brown; dorsal region mummy brown tinged with reddish, brightest and reddest on the rump; outer side of arms pale brown; legs reddish; inner side of arms and legs pale ochraceous rufous; flanks pale brown; throat and chest yellowish white; rest of under parts pale ochraceous rufous; tail reddish brown, base of hairs nearly white; hands and feet reddish, digits gray. Ex type British Museum.

Measurements. Total length, 730; tail, 390; foot, 250; ear, 35, (Collector). Skull: total length, 92; occipito-nasal length, 82.4; intertemporal width, 40.5; Hensel, 60.3; zygomatic width, 61.1; width of braincase, 50.7; median length of nasals, 15; palatal length, 29.2; length of upper molar series, 18.4; length of mandible, 57.5; length of lower molar series, 24.3. Ex type in British Museum.

This is another species of CEBUS described from a single immature example, a female, but without some of the objections attached to Gray's specimen, for this one has a history and we know the locality whence it came. Although it exhibits some difference in color from C. UNICOLOR Spix, mindful of the variations existing in their hues among all the Capuchin Monkeys, the probability is that eventually it will be found to be the same as Spix's species. At present, it can only be left under the name Mr. Thomas has given it, trusting that the acquisition of more material, and authentic information will enable it to take an indisputable place in the genus.

CEBUS FLAVUS E. Geoffroy.

Simia flavia Schreb., Säugth., 1775, pl. XXXI B. (desc. nulla).

Cebus flavus E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 112; Kuhl, Beitr. Zool., 1820, p. 33; Wied, Beitr., 1826, p. 10; Fisch., Syn. Mamm., 1829, p. 49; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 207; V, 1855, p. 94; D'Orbign., Voy. Amér. Mérid., Mamm., IV, 1847, p. 1?; I. Geoff., Cat. Primates, 1851, p. 45; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 163, 167; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 204; Forbes, Handb. Primates, I, 1894, p. 209.

Cebus barbatus E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 110; Kuhl, Beitr. Zool., 1820, p. 33; Desm., Mamm., 1820, p. 82; Fisch., Syn. Mamm., 1829, p. 48; Less., Spec. Mamm., 1840, p. 146; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 208; V, 1855, p. 87; I. Geoff., Cat. Primates, 1851, p. 45; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 162, 166; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 49; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 197.

Cebus albus E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 112, (albino); Kuhl, Beitr. Zool., 1820, p. 34.

Cebus fulvus Desm., Mamm., 1820, p. 88; Reichenb., Vollständ. Naturg. Affen, 1862, p. 30, fig. 83.

Cebus brissoni Less., Spec. Mamm., 1840, p. 155.

Cebus (*Pseudocebus*) *flavus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 32, pls. VI, figs. 89, 90, VII, fig. 108.

Cebus (*Calyptrocebus*) *barbatus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 35, pl. VI, fig. 101; pl. VII, fig. 116.

Cebus (*Calyptrocebus*) *albus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 35, not figured.

Caiarára branca Bates, Nat. Riv. Amaz., II, 1863, p. 100.

SLENDER CAPUCHIN.

Type locality. "le Brésil." Geoffroy's type in Paris Museum.

Geogr. Distr. Bolivia, (D'Orbigny). Range unknown.

Color. Forehead and top of head almost cream color; back of head and neck, pale golden brown; dorsal region paler brown, reddish on rump, rest of body fulvous or yellowish fulvous, becoming grayish on shoulders, flanks, and hinder part of arms and thighs; limbs yellow, the legs strongly tinged with golden; hands and feet yellowish brown; under parts yellowish gray, but most of the hair gone; tail reddish buff above, at base like rump but paler; beneath sooty gray. Albinistic individual. Ex type Paris Museum.

Measurements. Skull: Not the type. Occipito-nasal length, 88; Hensel, 65; zygomatic width, 71; intertemporal width, 40; median length of nasals, 10; length of upper molar series, 21; length of mandible, 63; length of lower molar series, 25.

The above describes Geoffroy's type as it is to-day, much faded in color and soiled with dust. Originally it was probably of a general golden yellow color, with a brown head, and tinged with red on rump and back. The present gray hues are probably derived from the dust that has settled upon the fur.

The type of *C. barbatus* Geoff., is also in the Paris Museum and, is referable to C. FLAVUS. It is not quite so greatly faded on one side of the body, and is of a general yellowish brown hue, the top of the head being almost a cream color, and a slight golden shade on occiput and neck; the hind limbs are somewhat darker than typical FLAVUS, but the differences perceptible after all these years, it has been in the Museum since 1812, are only such as the variability of the species and the deterioration of the specimen could easily produce. One side of the type is paler than the other. The skulls unfortunately are in the examples and no opportunity is therefore afforded for ascertaining if any cranial differences exist. Mindful of the great variations existing among nearly all the species of CEBUS, uniting these specimens in one species seems to be the proper course to pursue.

CEBUS CASTANEUS I. Geoffroy.

Cebus castaneus I. Geoff., Cat. Primates, 1851, p. 46; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 97; Dahlb., Stud. Zool. Fam. Reg. Anim. Nat., fasc. I, 1856, pp. 164, 168.

Cebus apella (nec Linn.), Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 199.

Type locality. Cayenne. Type one of two in Paris Museum.

Genl. Char. Size large, tail very long, black on crown a mere stripe, greater part of forehead yellowish white.

Color. Head yellowish white, triangular small black patch on middle of crown, extending as a mere thread to the forehead; above ears and nape reddish chestnut; upper parts of body and hind limbs reddish chestnut, tips of hairs pale rufous; dorsal line darker; shoulders and front part of arms above elbows pale yellow, rest of arms to middle forearm, outer side, golden yellow, grading into blackish brown on lower forearm and wrist, the hairs tipped with yellowish; hands blackish; inner side of arms dark reddish chestnut; under parts chestnut becoming blackish towards groin; tail blackish brown, hairs tipped with grayish.

Measurements. Total length about 980; tail, 525. Skull in specimen.

There are two examples of this form in the Paris Museum and each one marked "un des types," but the real type, unless one of the specimens is it, does not seem to be in the collection. Both examples came from Cayenne, one brought by M. Martin in 1819, the other by M. Poiteau in 1882. I am not satisfied to consider these as C. APELLA, (*capucinus* Auct.), for besides the peculiar chestnut color of the body, and the yellow on shoulders and upper arm, the head lacks entirely the black cap of APELLA and the black lines on side of face meeting under the chin. There are no tufts and the hair on head is short.

CEBUS VARIEGATUS E. Geoffroy.

Cebus variegatus E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 111; *Id.* Cours Hist. Nat. Mamm., 1828, p. 9, 10me Leçon; Kuhl, Beitr. Zool., 1820, p. 83; Temm., Mon. Mamm., 1827, p. XIV; Less., Mamm., 1840, p. 153; I. Geoff., Cat. Primates, 1851, p. 48; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 163, 167; Pucher., Rev. Mag. Zool., 1857, p. 343; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 208; Forbes, Handb. Primates, I, 1894, p. 211.

Simia (*Cebus*) *variegatus* Humb., Rec. Obs. Zool., 1811, (1815), p. 356.

Cebus xanthosternos Kuhl, Beitr. Zool., 1820, p. 35; Desm., Mamm., 1820, p. 84; Wied, Beitr., 1826, p. 90; Fisch., Syn. Mamm., 1829, p. 46; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 209; V, 1855, p. 95.

Cebus robustus Kuhl, Beitr., 1820, p. 35; Desm., Mamm., 1820, p. 80; Wied, Beitr., 1826, p. 90; Fisch., Syn. Mamm., 1829, p. 45; Less., Spec. Mamm., 1840, p. 40; I. Geoff., Cat. Primates, 1851, p. 43; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 160, 165.

Cebus monachus F. Cuv., Hist. Nat. Mamm., livr. XIX, 1820, pl.; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 208; Less., Spec. Mamm., 1840, p. 151; Forbes, Handb. Primates, 1894, p. 209.

Cebus xanthocephalus Spix, Simiar. et Vespert. Bras., 1823, p. 6, pl. CXIV; Temm., Mon. Mamm., 1827, p. XIV; Less., Spec. Mamm., 1840, p. 149; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 50.

Cebus cucullatus Spix, Simiar. et Vespert. Bras., 1823, p. 9, pl. VI; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 209; Less., Spec. Mamm., 1840, p. 142; Gray, Proc. Zool. Soc. Lond., 1865, p. 827; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 52, juv.

Cebus (*Eucebus*) *robustus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 32, pl. VII, figs. 88, 91.

Cebus (*Eucebus*) *cucullatus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 39, pl. VII, fig. 93.

Cebus (*Eucebus*) *variegatus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 56, pl. VI, fig. 92.

Cebus (*Eucebus*) *monachus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 56, pl. VII, figs. 90, 91.

Cebus subcristatus Gray, Proc. Zool. Soc. Lond., 1865, p. 827; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 52, Juv.

VARIEGATED CAPUCHIN.

Type locality. Brazil. Type unknown.

Geogr. Distr. Eastern Brazil from Bahia to Rio de Janeiro, Rio Mucuri, (Wied); Bahia, (I. Geoffroy); forests near Rio de Janeiro, (Spix).

Genl. Char. Hair on top of head short, no tufts; size moderate, face bare.

Color. Top of head black, the hairs being yellowish with black tips; a line from temples down each side of face meeting under the chin dark reddish brown; patch in front of ears, and sides of head behind ears, yellowish white; back of neck and upper parts black; the hairs being slate at root, then golden yellow, and tips black. It is the tips that give the general color to the upper parts, but the golden yellow shows through in spots. Shoulders and arms to elbow yellowish white, (this color probably faded from a richer yellow), numerous hairs tipped with brownish black; forearms, hands, hind limbs, feet and tail brownish black; very little hairs remain on under parts, those on the chest yellowish white, and those on side of belly with a reddish tinge, all that remains of Geoffroy's "ventre roussâtre." Ex Geoffroy's specimen in Paris Museum.

Measurements. About the size of an ordinary Capuchin. Total length, 828.2; tail, 393.7; foot, 120.6. Skull, not the type: occipito-nasal length, 88; Hensel, 72; zygomatic width, 62; intertemporal width, 43; median length of nasals, 12; length of upper molar series, 21; length of mandible, 62; length of lower molar series, 25.

Undoubtedly the delicate yellows of the above described example have all faded from their original richer hues, even that on the hairs of the back, though protected in a great measure from the light by the black tips, having in many places lost the golden hue and become a pale yellow. The specimen is a young animal, in ragged pelage, and was given to the Museum in March 1810, evidently without any locality attached, for the only country associated with it, is the statement beneath the stand "Il vient sans doute de Brésil."

What has become of E. Geoffroy's type is not known.

With specimens of C. VARIEGATUS, and type of C. CRASSICEPS before me it is effectually demonstrated that Schlegel was wrong in making the latter a synonym of the former, (Simiæ, p. 209), for they are totally dissimilar, having an entirely different style of coloring, and CRASSICEPS has prominent tufts on the head. Making all allowance for possible variations, which are well known to occur in members of the different species of this genus, it is hardly to be conceived that these two examples represent the same species; for if they do, we might just as well place all these monkeys under one name and give up all further attempts to separate them into various distinct forms.

This is an exceedingly variable species, the specimen described being as near the typical style is it seems possible to reach. The types of *C. subcristatus* Gray, and *C. capillatus* Gray, are in the British Museum Collection. They are immature animals without localities, the first having been obtained from Cross, a dealer in live animals, and the latter from the Zoological Society, both having died in captivity. The character given to separate these from other members of the genus was chiefly the manner of growth of the hairs on the crown. This at the best is but an unsatisfactory and unreliable character, if it may be called one in a skin, and hardly sufficient to establish a species. The hair on the crown of *C. subcristatus* is in position and probably exhibits it as when the animal was alive, but that of *C. capillatus* is much mussed and it cannot well be determined how it was during the life of the animal. The specimens closely resemble each other in color, have pale colored arms, and I refer them both to the present species. The facts that they are not more than half grown, have died in captivity, have no history attached to them, nor any locality known from which they came, or whether they may have been born in captivity or not, render their value as types of species practically *nil*. But as far as it is possible to determine from the mere coloring of the specimens they are referable to C. VARIEGATUS. Spix's type of *C. xanthocephalus* in Munich Museum, agrees practically in all respects with C. VARIEGATUS. The type of *C. cucullatus* Spix, is also in the Munich Museum, and while it varies in some respects from typical C. VARIEGATUS such as the top of the head being brown and not black, and a few other minor differences, I do not hesitate to consider it as the same.

CEBUS MALITIOSUS Elliot.

Cebus malitiosus Elliot, Bull. Am. Mus. Nat. Hist., N. Y., 1909, p. 230.

Cebus capucinus (nec Linn.), Allen, Bull. Amer. Mus. Nat. Hist., N. Y., 1904, p. 467; Elliot, Cat. Mamm. Field Columb. Mus., Zool. Ser., 1907, p. 561, (Part.).

Type locality. Vicinity of Bonda, Colombia. Type in American Museum of Natural History in New York.

Genl. Char. Crown blackish brown; shoulders yellow.

Color. Male. Top of head, back of neck, entire upper parts, arms including elbows, and inner side of forearms and legs mummy brown; tips of hairs paler, in some lights on the body, of a golden hue; the crown is somewhat darker than the back; forehead wood brown; space around eyes naked, flesh color; end of nose and lips dark brown, the lips sparsely covered with short white hairs; face, sides of head, shoulders, and arms on outer side nearly to the elbow, straw yellow; body beneath, similar to upper parts but paler; basal half of tail above, mummy brown, apical half very dark wood brown; ears flesh color, covered with straw yellow hairs.

Measurements. (Skin). Total length, 890; tail, 433; foot, 113. Skull: total length, 102.3; occipito-nasal length, 98.2; Hensel, 77.5; intertemporal width, 44; greatest width of braincase, 54.5; zygomatic width, 7; palatal length, 35; median length of nasals, 22.2; width of orbits, 47; length of molar series, 22.1; length of canines, 28.2; length of mandible, 6; height of ascending ramus, 34.6; width of alveolar border, 39.1; length of lower molar series, 37.7.

CEBUS CHRYSOPUS F. Cuvier.

Cebus chrysopus F. Cuv., Hist. Nat. Mamm., 1825, pl.; Fisch., Syn. Mamm., 1829, p. 51; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 298; V, 1855, p. 94; Less., Spec. Mamm., 1840, p. 153; I. Geoff., Cat. Primates, 1851, p. 47; Dahlb., Stud. Zool. Fam. Reg. Anim. Nat., fasc. I, 1856, pp. 164, 168; Gray, Proc. Zool. Soc. Lond., 1865, p. 827; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 51; Forbes, Handb. Primates, I, 1894, p. 218.

Cebus (*Calyptrocebus*) *chrysopus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 37, pl. VII, fig. CIX.

Type locality. Unknown.

Geogr. Distr. Colombia, (Plée). Type not in Paris Museum.

Genl. Char. Similar to C. ALBIFRONS but smaller and paler.

Color. Fore part and sides of head in front of ears white, back part of crown and occiput mummy brown; dorsal stripe very narrow at neck and widening as it goes until it covers all the rump, cinnamon red; shoulders, arms to elbows, and flanks pale yellow, probably faded; upper edge of thighs from hips to knees, legs and feet, forearms and hands rather pale ochraceous rufous, outer side of thighs paler; inner side of limbs ochraceous rufous; chin, throat, sides of neck and under parts of body pale yellow; tail above dark brown tinged with red, becoming golden towards tip.

Measurements. Total length, 833.4; tail, 406.4; foot, 126.6.

The types of F. Cuvier's species are not now in the Paris Museum, and it is very doubtful if any number of them ever were placed in the collection. They were menagerie specimens almost without exception, and without any certain locality, for in those days the exact habitat of any animal was little considered; it was enough if the continent from whence an example came was known.

So the type of C. CHRYSOPUS is not extant to-day, but there are several specimens in the Museum and the above description was taken from one of the best preserved, although doubtless the more delicate colors of the pelage have faded and lost much of their depth of hue.

It is a much smaller and paler colored animal than C. ALBIFRONS and belongs to the group of this genus of monkeys with the front half of the head white. Two of the Museum specimens came from Colombia, brought by M. Plée in 1826.

Cebus apiculatus Elliot.

Cebus apiculatus Elliot, Ann. Mag. Nat. Hist., XX, 1907, 6th Ser., p. 292; Allen, Bull. Am. Mus. Nat. Hist., N. Y., XXX, 1911, p. 273.

Cebus flavus (nec Geoff.), Elliot, Cat. Mamm. Field Columb. Mus., F. C. M. Pub., VIII, 1906, p. 560, Zool. Ser.

Cebus fatuellus Allen, Am. Mus. Nat. Hist., N. Y., XX, 1904, p. 344, (nec Linn.).

Type locality. La Union, Lower Orinoco. Type in British Museum.

Geogr. Distr. Guayapo, La Union, Lower Orinoco, El Laguall, La Bomba, El Hacha, Aroa, (Allen); Sciapure and Marino; Rio Caura, and Rio Mocho, a tributary of Upper Rio Caura; Venezuela.

Color. Male. Face flesh color. Black spot on middle of crown extending in a narrow line on to the forehead; rest of head grayish brown, becoming white on forehead and sides in front of ears; nape reddish brown; upper parts of body and root of tail, blackish brown; all the hairs of lower half of body tipped with russet, giving this part a reddish appearance; arms to wrist on outer and inner sides pale yellow, the hairs being blackish brown at base and tipped with pale yellow which becomes the dominant color; wrists and hands blackish brown; hairs toward shoulders are pale yellow to the roots, the blackish brown base beginning at the elbows; legs on outer side pale yellow, becoming reddish below the knees, the hairs being blackish brown tipped with pale yellow to the knee, and then above tipped with golden; throat yellowish white; chest yellowish brown; rest of under parts dark brown in the center of the body, the hairs pale yellow at base; hands blackish brown, feet black; tail above like thighs until near the tip, the hairs being black tipped with pale yellow, tip blackish brown, beneath blackish brown the entire length.

Female. From Guayapo, Lower Orinoco. Hair on head much longer on top and on sides than on the male, standing out in the shape of a semi-crest; the upper part of the arms is darker, being a yellowish brown; the back is not so conspicuously tipped with yellow, and is more red on the rump, as are also the legs; the black on the crown is broader and covers all the back of the head; the tail is like that of the male; all the under parts are blackish brown, only the roots of the hairs on the chest being yellowish white.

Another female from the same locality is much redder above, the hairs tipped with yellow on the sides, and with ferruginous on dorsal region and on the thighs; middle of head from a point on the forehead to occiput blackish brown; back of neck reddish brown like dorsal region; long hairs on forehead and sides of head pale brown; arms reddish brown, only a little of the pale yellow so conspicuous on the male appearing near the shoulder; forearms, legs, hands and feet, under parts and tail, like the male.

Measurements. Male. Total length, 918; tail, 459. Skull: occipito-nasal length, 91; temporal width, 42; palatal length, 32; breadth of braincase, 52; length of nasals, 19; length of upper molar series, 21; length of mandible, 55; length of lower molar series, 24.

Mr. Carriker who obtained this species in Venezuela states: "this monkey I found to be by far the most abundant and least wary of the three species in all places visited on the Caura and in northeastern Venezuela. However they do not, as a rule, ascend to any great altitude, preferring the forest along the streams or anywhere in the comparatively low country. Almost invariably they will be seen in small troops of from a half dozen to twenty, very seldom a pair alone. While not as shy as the other species, they are nevertheless far from easy to shoot, and must be taken by surprise, or else they rapidly make their escape through the high tree-tops. They tame easily and make interesting and affectionate pets if not mistreated.

"Rare in the region of El Hacha and Aroa. They live up on the slopes above the valley, descending occasionally to feed on the corn, etc., planted on the lower slopes."

CEBUS LIBIDINOSUS Spix.

Cebus libidinosus Spix, Sim. et Vespert. Bras., 1823, p. 5, pl. II; Fisch., Syn. Mamm., 1829, p. 48; Less., Spec. Mamm., 1840, p. 152; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 86; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 49, var.? of C. *capucinus;* Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 201.

Cebus (*Calyptrocebus*) *libidinosus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 34, pl. VI, figs. 46, 98, 102.

Type locality. River Carinainha, tributary of the Rio San Francisco, Province of Minas Geræs. Type, one of two examples in Munich Museum.

Genl. Char. Hair on head long, upright, probably shows tufts in life.

Color. Top of head and nape, black; a brown stripe on side of head in front of ears; temples and space between brown stripe and eye, white; between stripe and ear yellow; dorsal region dark yellowish brown; sides of body and arms to elbows, and front of forearms and thighs orange yellow; front of thighs and legs below knees, inner side of forearms, hands and feet black; throat and under parts orange yellow; tail, basal fourth beneath orange yellow, rest above and beneath blackish brown. Skull in specimen. Ex type? Spix, Munich Museum.

Measurements. Skull, not of type: total length, 88; occipito-nasal length, 85; zygomatic width, 55; intertemporal width, 38; median length of nasals, 11; length of upper molar series, 18; length of mandible, 50; length of lower molar series, 23. juv. ♂. Leyden Museum specimen.

This is a pale yellow brown monkey with rather long hair on the top of the head, which probably could be erected at the will of the animal, but which would never exhibit tufts like C. CIRRIFER or others of the tufted group, but probably would exhibit these in a moderate degree. There are two specimens in the Munich Museum both marked 'Type,' and which differ somewhat in color. One, the smaller is described above; the other and larger animal, has the limbs, hands and feet brown, more as shown in Spix's figure, although in his description he states, speaking of "Les poils," "ceux des mains et des pattes sont entièrement noirs et très courts." Whether this difference in color is caused by age or sex it is difficult to say, but both examples seem to be adult. I have selected the one agreeing with Spix's description, though not with his figure, as probably the best representative of the species.

CEBUS FATUELLUS (Linnæus).

Simia fatuellus Linn., Syst. Nat., I, 1766, p. 42; Bodd., Elench. Anim., 1784, p. 62; Schreb., Säugth., I, 1775, p. 118, pl. XXVIIB; Audeb., Hist. Nat. Singes et Makis, 1797, Fam. V, Sec. III, p. 1, pl. I.

Cebus fatuellus Erxl., Syst. Reg. Anim., 1777, p. 51; E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 109; *Id.* Cours Hist. Nat. Mamm., 1828, p. 8, 10me Leçon; Kuhl, Beitr. Zool., 1820, p. 32; Desm., Mamm., 1820, p. 84; Fisch., Syn. Mamm., 1829, p. 45; Less., Spec. Mamm., 1840, p. 139; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 209; V, 1855, p. 84; Flow., Proc. Zool. Soc. Lond., 1865, p. 333; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 207; Forbes, Handb. Primates, I, 1894, p. 211, (Part.).

Cebus buffoni Less., Spec. Mamm., 1840, p. 140.

Cebus apella (nec Linn.), I. Geoff., Cat. Primates, 1851, p. 42, (examples "avec pinceau"); Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 48.

Cebus (*Eucebus*) *fistulator* Reichenb., Vollständ. Naturg. Affen, 1862, p. 56, pl. VI, fig. 86.

Cebus (*Otocebus*) *fatuellus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 46, pl. VIII, figs. 124, 128, 129, 135.

Type locality. Unknown.

Geogr. Distr. Tolima and Upper Magdalena Valley, Colombia, at an elevation of from 5,000 to 7,000 feet. Peru?

Genl. Char. Hair over temples elevated into short horn-like crests in adults.

Color. Forehead, temples, sides of head, face and chin, grayish white; face, flesh color; top of head and hair tufts and back of neck, line inside of face in front of ears meeting beneath the chin, forearms, legs, hands, feet and tail, black; arms from shoulders to elbows yellowish, near wood brown but paler; upper parts dark Vandyke brown, dorsal line reddish chestnut, blackish on rump; hairs on under parts yellowish white at base, then reddish, and the apical half black.

Measurements. Skull: occipital part missing; intertemporal width, 33; palatal length, 30; breadth of braincase, 50; median length of nasals, 13; zygomatic width, 59; length of upper molar series, 21; length of mandible, 55; length of lower molar series, 26. Vertebræ: Cervical, 7; Dorsal, 14; Lumbar, 5; Sacral, 3; Caudal, 26.

The general appearance of this monkey is that of a reddish brown animal with yellowish shoulders and upper arms, and a black head with two tufts or horns upstanding, one on each side. It is, however, subject to great variation, to such an extent at times, that it would seem most improbable that the various styles should represent the same species. It is practically impossible to work out the synonymy of this variable species with any degree of accuracy, since the name *fatuellus* has been given to various Capuchins from numerous localities in which the true FATUELLUS has never been found. It has been attributed to the Guianas, but the writer has not seen an authentic specimen from that part of South America. Wied, (l. c.) calls the Capuchin from the Province of Rio de Janeiro this species, but his animal is the C. CIRRIFER Geoff. The descriptions of the earlier Authors are often so brief and unsatisfactory that it is frequently impossible to determine what species it is to which they refer, and there is so much variation in the color of pelage among individuals of the three species, VARIEGATUS, FATUELLUS, and MACROCEPHALUS, and in some cases they resemble each other so closely, that unless a definite locality accompanies the example, it is impossible to decide to which species it should be referred, and definite localities are rarely given by the Authors of the earlier part of the nineteenth century.

CEBUS FATUELLUS PERUANUS Thomas.

Cebus fatuellus peruanus Thos., Ann. Mag. Nat. Hist., VII, 7th Ser., 1901, p. 178.

Type locality. Marcapata, Huoynapata, Inambari Valley, S. E. Peru. Type in British Museum.

Genl. Char. Like C. FATUELLUS, but horns not quite so much developed, and the yellow in the arms absent.

Color. Precisely like C. FATUELLUS as described, but arms from shoulders to elbow same color as back. Black tufts on crown not so long. Ex type British Museum.

Measurements. Skull: occipito-nasal length, 79; zygomatic width, 64; intertemporal width, 39; palatal length, 29; breadth of braincase, 51; median length of nasals, 15; length of upper molar series, 21; length of mandible, 53; length of lower molar series, 27. Ex type British Museum.

There are two specimens of this form both immature, and indistinguishable in color from C. FATUELLUS, except that the upper part of the arms is like the back instead of being yellowish. I attribute this to age, or possibly season, and the shorter tufts on head to age or possibly sex, as both the specimens are females. The examples may probably prove to be the young of C. FATUELLUS.

CEBUS MACROCEPHALUS Spix.

Cebus macrocephalus Spix, Sim. et Vespert. Bras., 1823, p. 3, pl. I; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 208; V, 1855, p. 96; von Pelz., Zool.-Bot. Ges. Wien, 1883, Beiheft, p. 12; Goldi, Os. Mamm., Bras., 1893, p. 43, (note).

Cebus robustus Tschud., Faun. Peruan., 1840, pp. 41, 45, (nec Kuhl, nec Wied).

Cebus (*Eucebus*) *macrocephalus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 56, pl. VI, fig. 87.

Cebus fatuellus Forbes, Handb. Primates, I, 1894, p. 211, (Part.).

LARGE-HEADED CAPUCHIN.

Type locality. Lake Cactua, near the Rio Solimoens. Type in Munich Museum.

Geogr. Distr. Rio Negro west of its mouth, (Brazil); Lake Cactua, (Spix); Rio Negro, (Natterer).

Color. Top of head, nape and back of neck black; hair on head very thick, with tufts higher on sides than in the middle, but no horns nor real crest present; arms to elbows, entire upper parts of flanks and thighs reddish golden brown, darkest in dorsal regions; forearms and legs below knees black, hairs tipped with rusty blackish; brown band in front of ears extending down sides of face and meeting under the chin; entire under parts, and inner side of arms above elbows ochraceous rufous; hands, feet, inner side of legs, and anal region black; tail above at base like back, remainder black, beneath black.

Measurements. Total length, 860; tail, 420; foot, 120. Skull: total length, 99.6; occipito-nasal length, 85.6; intertemporal breadth, 41.2; width of braincase, 53; Hensel, 71; zygomatic width, 75; median length of nasals, 28.8; palatal length, 33.1; length of upper molar series, 22.6; length of mandible, 61.5; length of lower molar series, 26.8.

This species varies greatly even among specimens from the same locality. The type represents the paler style, but the majority of examples, perhaps, are very much darker with many black hairs mingled with the reddish brown, especially on the dorsal region and rump. It is a paler species than C. FATUELLUS which has more of the chestnut color on the upper parts of the body; and the present form has no black on the under parts which is characteristic of the adults of C. FATUELLUS. But there is a great deal of variation in both species and it is by no means easy occasionally to refer correctly certain specimens to their rightful species. Spix in his description speaks of a frontal crest, but his plate shows none, and there is none in the strict interpretation of the term, but there is a tuft on each side of the head from the forehead, and the center or dividing line of these tufts is higher than the hair on top of the head behind.

CEBUS VERSUTA Elliot.

Cebus versuta Elliot, Ann. Mag. Nat. Hist., V, 8th Ser., 1910, p. 77.

Type locality. Araguay, Rio Jordao, western part of Minas Geræs, Brazil. Type in British Museum.

Genl. Char. Hair on head very thick, long, depressed in the center, and rising on each side in broad ridges extending from forehead to occiput, unlike horns or tufts; size large; tail long, thick; hairs of body long, loose; arms above elbows pale; fingers and toes gray.

Color. Male. Top of head from forehead to nape extending to hind neck, black; temples and cheeks yellowish white; dark brown band in front of ear down face to lower jaw, not meeting beneath; dorsal region Prout's brown; rest of upper parts and flanks bistre; arms above elbows and sides of neck, cream buff; thighs ochraceous buff; forearms and legs below knees black ticketed with reddish, most numerous on forearms; throat, chest, under parts to scrotum, inner side of arms above elbows, and innermost side of thighs golden yellow; inner side of forearms, outer portion of thighs and legs below knees, scrotum and anal region black; hands and feet black, fingers and toes covered with gray hairs; tail above, three fourths black speckled with red, remainder black, beneath brownish black, hairs pale yellow at base then brownish black, or towards tip grayish white at base, then black.

Measurements. Total length, 910; tail, 460; foot, 132; ear, 35, (Collector). Skull: total length, 94.1; occipito-nasal length, 81.7; intertemporal width, 41.6; breadth of braincase, 52.5; Hensel, 63.8; zygomatic width, 70.3; palatal length, 32.1; median length of nasals, 28.1; length of upper molar series, 23.5; length of mandible, 64.5; length of lower molar series, 28.3.

This species belongs to the Azara group as indicated by the gray fingers and toes. It is, however, a much darker animal than either C. AZARÆ or *C. a. pallidus.* The patch on the head is more extensive, heavier and blacker than that of C. AZARÆ, and of course entirely different from that of *C. a. pallidus* with its two imperfect black patches. The black cap of C. AZARÆ is inclined to lie flat to the head, except just in front in most examples, where on each side two low ridges can be seen, but some specimens have small tufts over forehead; both styles, however, are quite different from the conspicuous ridges of the present species which exhibit the hairs rising close together at the forehead, widening as they extend backward until they occupy, with the exception of a narrow division in the center, the entire occipital portion of the head. The coloring of the two forms, as the descriptions show, is quite different. Five specimens were procured by Mr. Robert at Araguay, Rio Jordao, western Minas Geræs, Brazil, all of which are in the British Museum.

CEBUS AZARÆ Rengger.

Cay Azara, Esai Nat. Hist. Parag., II, 1801, p. 182.

Cebus azaræ Rengg., Nat. Säugeth. Parag., I, 1830, p. 26; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 189; Burm., Desc. Phys. Rep. Argent., III, 1877, p. 52; Matschie, Sitzungsb. Ges. Naturf. Freunde, 1894, p. 57; Forbes, Handb. Primates, I, 1894, p. 219; Thos., Proc. Zool. Soc. Lond., 1903, p. 234.

Cebus elegans I. Geoff., Compt. Rend., XXXI, 1850, p. 875; *Id.* Cat. Primates, 1851, p. 45; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 86; Casteln., Expéd. Amér. Sud. Zool., I, 1855, p. 9; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 160, 161; Gray, Proc. Zool. Soc. Lond., 1855, p. 826; von Pelz., Zool.-Bot. Ges. Wien, 1883, Beiheft, p. 12; Goldi, Mamm. Bras., 1893, p. 48, (note).

Cebus (*Otocebus*) *elegans* Reichenb., Vollständ. Naturg. Affen, 1862, p. 44, not figured.

Cebus (*Otocebus*) *azaræ* Reichenb., Vollständ. Naturg. Affen, 1862, p. 48, not figured.

AZARA'S CAPUCHIN. Native name *Cay.*

Type locality. Paraguay, Brazil.

Geogr. Distr. Paraguay northward, west of the Parana to Matto Grosso, Brazil; Santa Cruz de la Sierra, Bolivia, (Burmeister)? probably *C. a. pallidus* Gray.

Color. Male. Top of head from forehead to nape and extending on to hind neck black, sometimes with a brownish shade; sides of head from the black cap and covering the cheeks cream buff; a rather indistinct brown band in front of ears passing under chin; dorsal region pale brown, rest of upper parts cream buff with brown hairs intermingled; arms iron gray, the hairs being cream buff with a subterminal black or seal brown band, and this band gives the dark gray appearance; sides of neck and flanks cream buff; throat, under parts of body, inner side of arms to elbow and outer side of thighs beneath bright buff; inner side of forearms, anal region, and inner side of legs black; outer side of thighs, cream buff, the hairs with subterminal brown rings; outer side of legs below knees black, hairs tipped with cream buff; tail rather bushy, basal portion similar to dorsal region, remainder black, beneath buffy at base remainder brownish black; hands and feet black, fingers and toes covered with grayish white hairs.

Measurements. Total length, 865; tail, 430; foot, 120, (Collector). Skull: total length, 90.6; occipito-nasal length, 80.4; intertemporal width, 40.4; breadth of braincase, 53.6; Hensel, 62.8; zygomatic width, 72.3; median length of nasals, 28.3; palatal length, 32.3; length of upper molar series, 23.9; length of mandible, 67; length of lower molar series, 27.5.

The type of this species was described from Paraguay. Not having seen an example from that district of Brazil, the above description was taken from an individual obtained at Serra da Chapada, Matto Grosso, to the north of Paraguay, and on the west of the River Parana, and which as far as Rengger's rather insufficient description enables us to ascertain, is the same as the Paraguay specimens. It is a very variable species and the individual described represents as nearly as possible its general appearance. But there are darker and paler styles, which, while having a general resemblance, differ considerably in their depth of coloring. Thus, in the pale style the cream buff predominates over all the body and upper part of limbs, the blackish hues not extending above the elbows or knees, while the darker form has the entire upper parts sepia with the line in front of ears beneath chin darker and more conspicuous. Ten specimens in the British Museum from Chapada exhibit these different and striking variations, the examples grading from nearly white to sepia. Young animals are much paler than the adults.

The type of *C. elegans* Geoffroy, in the Paris Museum, may also be assigned to this species. It is not so dark on the back, and the under parts are paler, but when we consider that the specimen has been in the Museum since 1812 exposed to the light for nearly a century, no surprise should be felt if it had in places become greatly faded. The tail is still brownish black and dark brown at tip and the digits are gray.

CEBUS AZARÆ PALLIDUS Gray.

Cebus pallidus Gray, Proc. Zool. Soc. Lond., 1865, p. 826; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 49.

Type locality. Bolivia. Type in British Museum.

Geogr. Distr. Santa Anna, Peru, into Bolivia. Complete range unknown.

Color. Forehead and temples yellowish white, extending in a narrow line on each side into the black cap, not meeting but nearly forming two black patches on the head; top of head and nape black; narrow brown line down sides of head in front of ears to chin; dorsal region between shoulders dark bistre, grading into Prout's brown on rump; rest of upper parts and flanks yellowish brown; arms to shoulders, thighs and sides of neck cream buff; throat, entire under parts of body, inner side of arms above elbows and thighs, buff, darkest in center of body; forearms and legs below knees black; hands and feet black; fingers and toes covered with grayish white hairs; tail above blackish brown to center, then pale brown to tip, sides and beneath pale wood brown. Ex type British Museum.

Measurements. Total length, 1,110; tail, 130; foot, 125. Skull: total length, 95.4; occipito-nasal length, 84.4; intertemporal width, 41.4; breadth of braincase, 56; Hensel, 63.9; zygomatic width, 68.6; palatal length, 31; median length of nasals, 27.9; length of upper molar series, 23.1; length of mandible, 66.8; length of lower molar series, 26.3. Ex type British Museum.

Gray's name is misleading, for this race is darker than *C. azaræ* generally, and no examples that I have seen are as pale as those to be found in Rengger's species. His description also gives no idea of the appearance of examples from Peru and Bolivia. The race in color is intermediate between C. AZARÆ, and C. VERSUTUS from the River Jordao in western Minas Geræs. The great peculiarity possessed by this form and which distinguishes it at once from the other two, is the extension of the white on each side of the head into the black cap, and almost forming two black patches, the front one much smaller than the one behind. The fingers in most of the specimens are paler than those of the two other species, being almost white. The exact range of *C. a. pallidus* is not known, but it was obtained by Kalinowski at Santa Anna in Peru and by Bridges in Bolivia. How near it may approach C. AZARÆ at Chapada is not known, but it is not improbable that their boundaries may overlap at some point between Peru and Matto Grosso.

CEBUS CIRRIFER E. Geoffroy.

Cebus cirrifer E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 110; *Id.* Cours Hist. Nat. Mamm., 1828, p. 8, 10me Leçon; Kuhl, Beitr. Zool., 1820, p. 31; Desm., Mamm., 1820, p. 84; Wied, Beitr., 1826, p. 97; Fisch., Syn. Mamm., 1829, p. 45; Less., Spec. Mamm., 1840, p. 137; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 209; I. Geoff., Cat. Primates, 1851, p. 44; Dahlb., Stud. Zool. Fam. Anim. Natur., fasc. I, 1856, pp. 162, 166; Flow., Proc. Zool. Soc. Lond., 1862, p. 333; Gray, Proc. Zool. Soc. Lond., 1865, p. 826; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 49.

Cebus niger E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 111; Kuhl, Beitr. Zool., 1820, p. 34; Desm., Mamm., 1820, p. 84; Fisch., Syn. Mamm., 1829, p. 48; Less., Spec. Mamm., 1840, p. 145; Pucher., Rev. Mag. Zool., 1857, p. 344; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 202; Forbes, Handb. Primates, I, 1894, p. 212.

Simia cirrifera Humb., Rec. Obs. Zool., I, 1811, (1815), p. 256.

Cebus fatuellus (nec Linn.), Wied, Beitr., 1826, p. 76.

Cebus cristatus G. Cuv., Reg. Anim., I, 1829, p. 102, note 2.

Cebus (*Otocebus*) *cristatus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 44, pl. VIII, figs. 126, 127, 130.

Cebus (*Otocebus*) *cirrifer* Reichenb., Vollständ. Naturg. Affen, 1862, p. 44, not figured.

Cebus (*Otocebus*) *niger* Reichenb., Vollständ. Naturg. Affen, 1862, p. 45, pl. VIII, figs. 131, 133.

Macaco prego Bates, Nat. Riv. Amaz., I, 1863, p. 323; II, p. 101.

Cebus leucogenys Gray, Proc. Zool. Soc. Lond., 1865, p. 824, pl. XLV; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 48.

Cebus fatuellus (nec Linn.), Hensel, Zool. Gart., I, 1867, p. 372; *Id.* Säugth. Sud Bras., 1872, p. 18.

TUFTED CAPUCHIN.

Type locality. "le Brésil." Type in Paris Museum.

Geogr. Distr. Southern Brazil; Sao Paulo (Spix); near Ypanema, (Natterer); New Fribourg, between the Rio de Janeiro, and Rio Parahyba, (Schlegel); north of the Rio de Janeiro, (Wied).

Genl. Char. Hair on forehead elongated in two tufts; general color sombre.

Color. Face, sides of forehead, cheek and chin yellowish white; upper parts black, brownish black or dark mummy brown; top of head to nape, jet black; limbs, hands, feet and tail black or brownish black; under parts from yellowish white washed with reddish, to ochraceous tipped with brownish black.

Measurements. Skull: total length, 93; occipito-nasal length, 82; Hensel, 59; zygomatic width, 62; intertemporal width, 39; palatal length, 30; breadth of braincase, 52; median length of nasals, 15; length of upper molar series, 21; length of mandible, 60; length of lower molar series, 25. Vertebræ: Cervical, 7; Dorsal, 14; Lumbar, 5; Sacral, 3.

The type of this species is in the Paris Museum and has the temples, sides of face, and chin yellowish white; top of head to nape brownish black; limbs, hands and feet, very dark mummy brown; entire upper parts mummy brown; side of limbs black; chest yellowish; under parts ochraceous tipped with brownish black; tail black. Tufts on head thick, but are flat on the head.

This is a dark species varying from almost black to a dark mummy brown. One of its prominent characters is the long hair on the front and sides of the head which stand up more like ridges than tufts, the hairs on the center of the head being much shorter thus creating a valley between the high sides. The under parts vary also, some being quite pale beneath, others a rich ochraceous, and this coloring is apparently independent of age or sex.

E. Geoffroy first called this species *Simia* CIRRIFER and afterward renamed it, supposing his specimen was distinct, *Cebus niger,* and Schlegel and others have adopted the latter name. According, however, to the rule that priority is given to the name first cited in a volume CIRRIFER takes precedence by one page, and *niger* becomes a synonym. The type of *C. niger* unfortunately is not in the Paris Museum, and nothing is known about it.

The type of C. CIRRIFER is in good condition and less faded than many of the other examples. It has also a more reddish tinge, but the species is quite variable in its coloring and ranges from mummy brown to nearly black on the upper parts. The type was obtained from the "Cabinet de Lisbonne" in 1808, and considering its great age is well preserved. It bears the statement beneath the stand, "type de l'espèce," and I have no doubt that it is the specimen originally described. The skull is in the specimen.

Bates says of this species (l. c.) which he calls *macaco prego,* that it is a "most impudent thief; it destroys more than it eats by its random, hasty way of plucking and breaking the fruits, and when about to return to the forest, carries away all it can in its hands or under its arms." He also says it is much quieter and better tempered than the Caiarára, C. ALBIFRONS, and is full of tricks, but these are generally of a playful character.

CEBUS CRASSICEPS Pucheran.

Cebus crassiceps Puch., Rev. Zool., 1857, p. 343.

Cebus (*Eucebus*) *crassipes* ! Reichenb., Vollständ. Naturg. Affen. 1862, p. 47, unfigured.

Type locality. Unknown.

Geogr. Distr. Rio Negro, (Natterer).? Type in Paris Museum.

Genl. Char. Hair on forehead long, upright in tufts.

Color. Middle of forehead between eyes, top and back of head black, the hairs reddish brown at base; sides of forehead over eyes and continuing in a narrow line on sides of head to angle of mouth, including lower part of cheeks, pale yellow; behind this a blackish brown band extends from the top of head passing in front of ears and covering whiskers and meeting under the chin; sides of neck grayish brown; a narrow line on back of neck, entire upper parts of body, flanks and arms to elbow bright golden brown tinged with red; forearms black, hairs tipped with grayish brown; hands brownish black; legs dark chestnut red; feet, blackish brown; the ochraceous rufous on base of hairs showing on forearms and legs giving them a mottled appearance; under parts of body pale yellow, as is also the inner side of arms above elbow; inner side of forearms and legs, black; tail black with a purple gloss, reddish hairs mixed with the black at base. Ex type in Paris Museum.

Measurements. In size equal to C. APELLA (Linn.). Skull in type specimen.

The unique type of this specimen is unlike any example of CEBUS I have ever seen. The entire upper part of the body and arms above elbows are chestnut red, a distribution of this color no other species possesses. It is most closely allied to C. APELLA, but the hair on the head is longer and the specimen is strikingly different in the color of the body. I have no other alternative than to consider this example as representing a distinct species, for though mindful of the great variation existing in the colors of various species of CEBUS, there is none known to me to which this specimen can be assigned. A specimen procured by Natterer on the Rio Negro, in the Vienna Museum, resembles somewhat the type of C. CRASSICEPS, differing in not having the sides of neck grayish brown, this part being reddish, and the base of hairs on forearms and legs are black like the rest and not ochraceous rufous, and under parts of body are pale yellowish red, not pale yellow. Nevertheless it has a general resemblance to C. CRASSICEPS, but is not so red.

CEBUS CALIGINOSUS Elliot.

Cebus caliginosus Elliot, Ann. Mag. Nat. Hist., V, 1910, 5th Ser., p. 78.

Type locality. St. Catarina, Sao Paulo, Brazil. Type in British Museum.

Genl. Char. Size large; head tufted, tooth rows straight, teeth large.

Color. Face flesh color about eyes and forehead, lips apparently brownish; superciliary band extending backwards to temples, yellowish white; hairs on upper lip at corner of mouth and on chin, head with its tufts, band in front of ears, and body above and below, whitish; limbs and tail jet black; hands and feet brownish black; hairs on fingers and toes brownish gray.

Measurements. Total length, 1,095; tail, 560; foot, 135. Skull: total length, 99.3; occipito-nasal length, 89.2; intertemporal width, 40; width of braincase, 53.5; Hensel, 70.4; zygomatic width, 73.2; median length of nasals, 18.2; palatal length, 33.5; length of upper molar series, 24.8; length of mandible, 70; length of lower molar series, 28.5.

This is a very large monkey received from the Museum at Sao Paulo and named *robustus*. The skull is large, the molar series straight and the teeth large, molar series larger than those of C. FATUELLUS. It is of course needless to say it bears no resemblance whatever to *C. robustus* = C. VARIEGATUS E. Geoff.

CEBUS VELLEROSUS I. Geoffroy.

Cebus vellerosus I. Geoff., Cat. Primates, 1851, p. 44; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 86; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 162, 166; Gray, Proc. Zool. Soc. Lond., 1865, p. 826; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 49; Forbes, Handb. Primates, I, 1894, p. 217.

Cebus (*Otocebus*) *vellerosus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 43, not figured.

THICK-FURRED CAPUCHIN.

Type locality. Province of Sao Paulo, Brazil. Type specimen in Paris Museum.

Geogr. Distr. Brazil. Range unknown.

Genl. Char. Tufts on head very large; hair of body long, loose, hanging from side below belly; long white hairs on body; tail long, thickly furred.

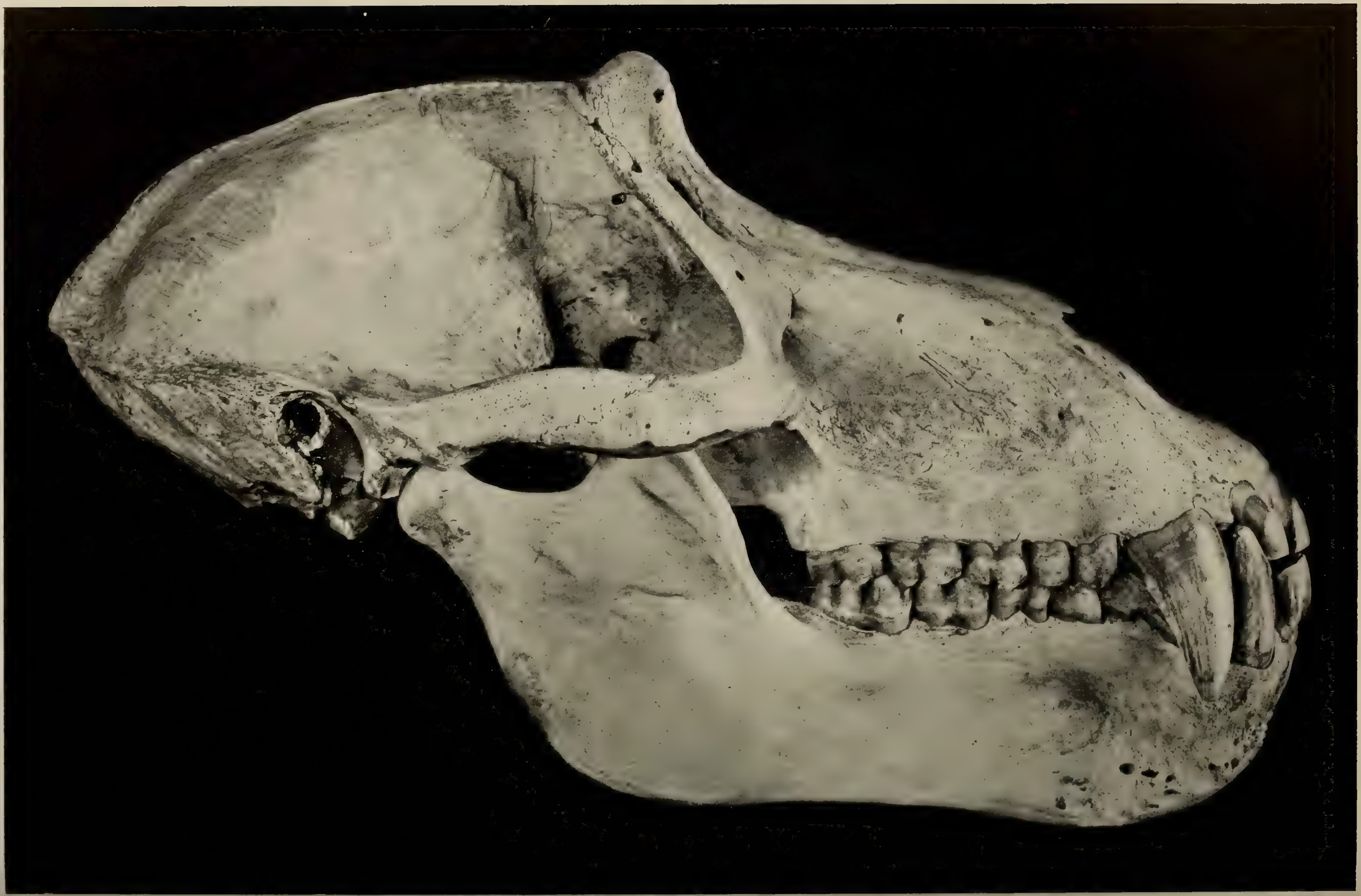
Color. Face bare, flesh color?; temples, sides of head, cheeks and chin, white or yellowish white, this sometimes extending along forehead over eyes; whiskers black or brownish black, meeting under the chin; neck, upper parts and sides of body black with brownish tinge or dark reddish brown, interlined with long white hairs; limbs and tail black; hands and feet black, fingers and toes brownish gray. Ex Paris Museum specimen.

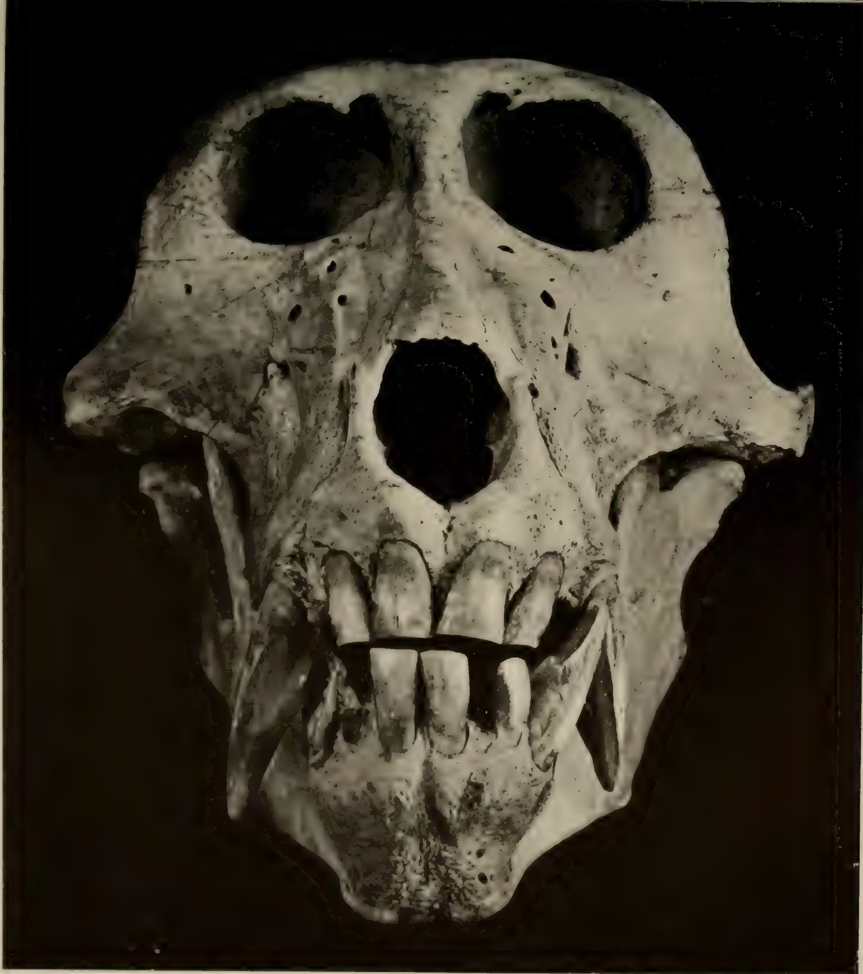
Measurements. Total length about 775; tail, 375. No skull.

Three examples of this species are in the Paris Museum, each one marked "un des types," but the real type, or one marked "type de l'espèce" could not be found. Two of the specimens have a white line on forehead, the other has the large heavy tufts springing directly above the eyes. It seems to be a distinct form of the tufted species characterized by the numerous long white hairs scattered about the fur. The specimens vary in color from a rather reddish brown to black glossed with brown. Two are marked from Brazil, Province of Sao Paulo, but of the third the locality is unknown.

In the Vienna Museum are two specimens collected by Hofrat Wettstein in Sao Paulo, Brazil, which I am inclined to attribute to this species. The number of long white hairs varies among the examples, one of them having many scattered about the pelage throughout the body generally, while the other has not quite so many.

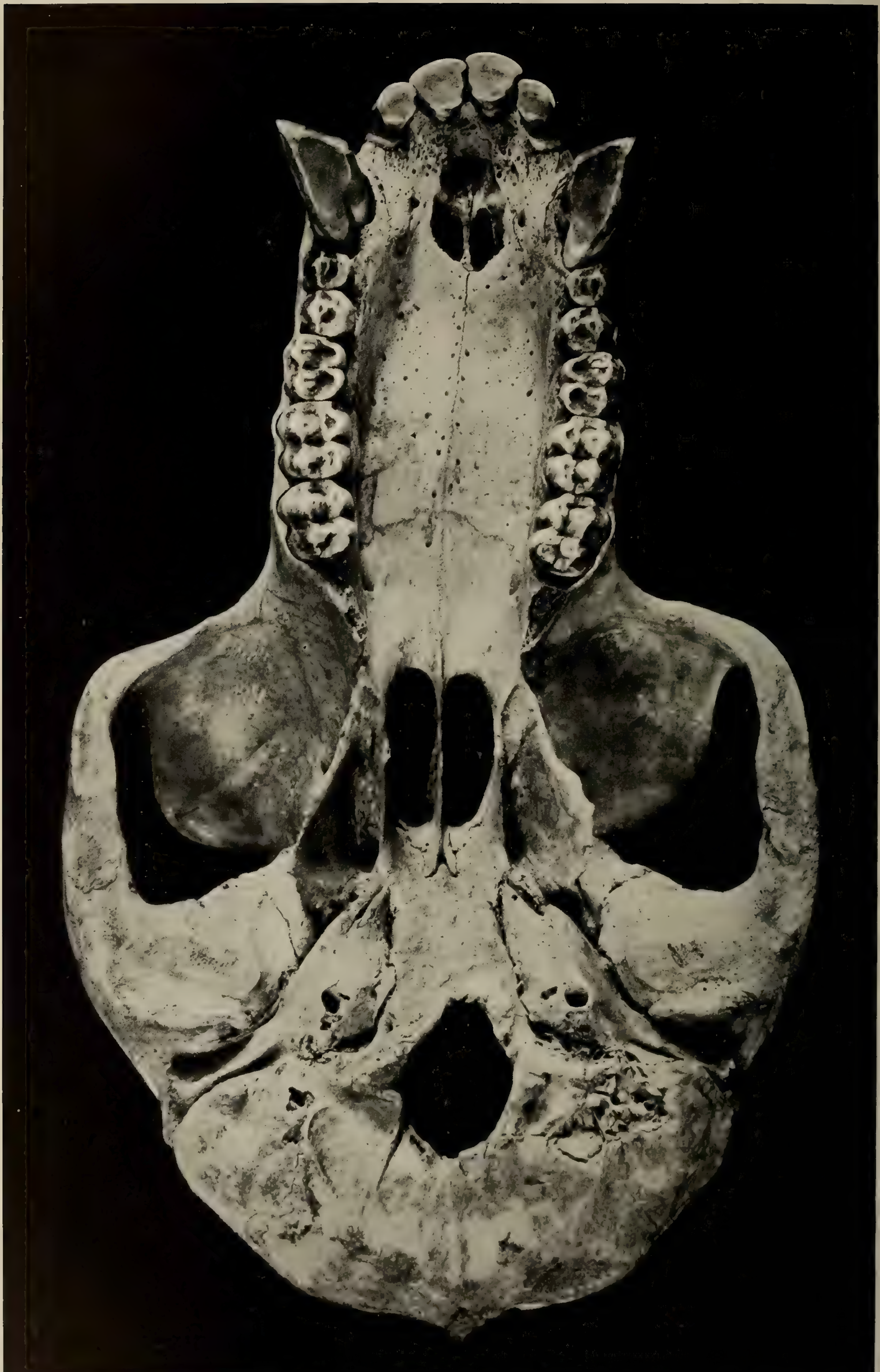
PLATE VI.





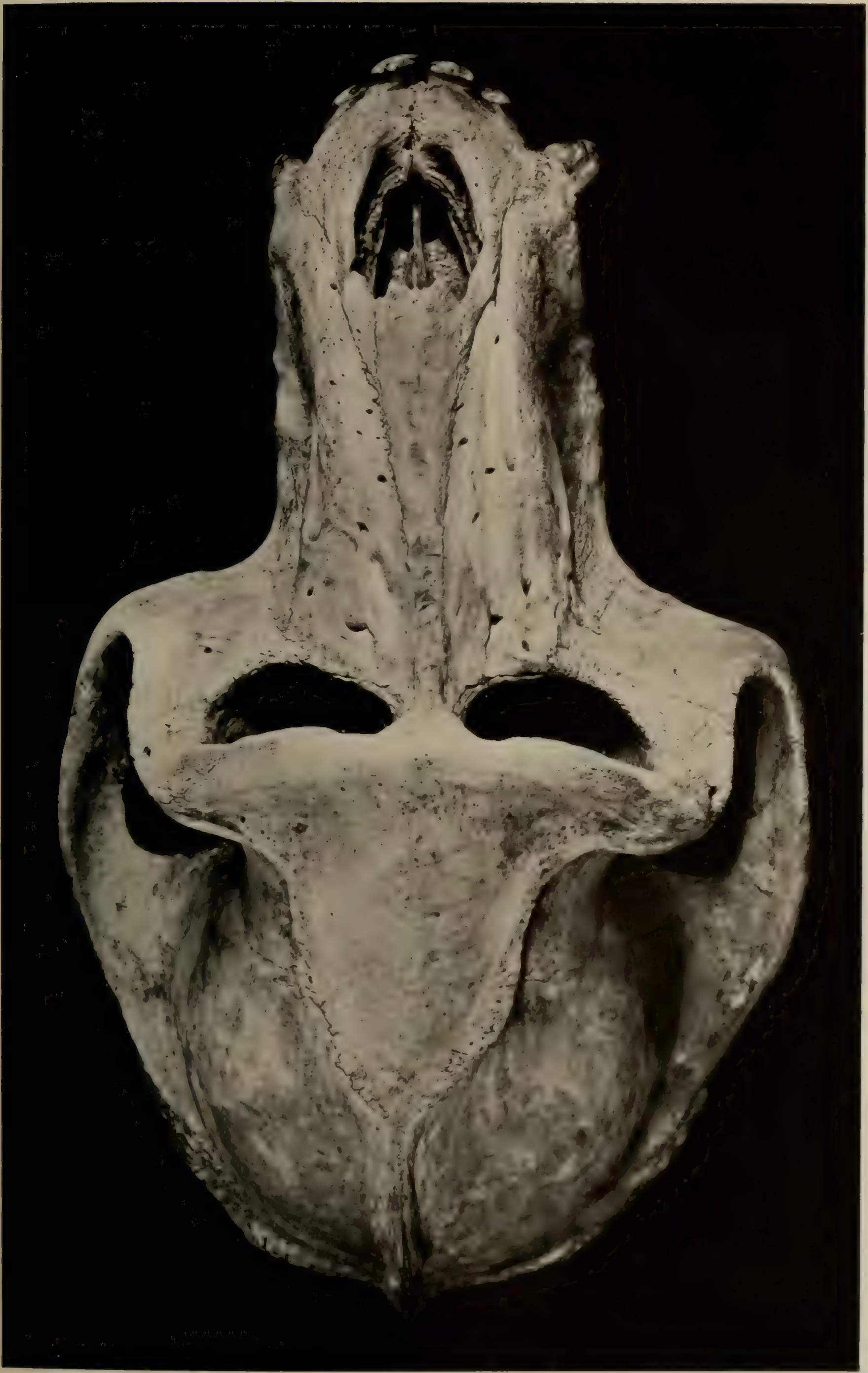
Papio nigeriæ.

No. 7.7.8.12. Brit. Mus. Coll. ¾ Nat. Size.



PAPIO NIGERIÆ.

No. 7.7.8.12. Brit. Mus. Coll. ¾ Nat. Size.



PAPIO NIGERIÆ.

No. 7.7.8.12. Brit. Mus. Coll. ¾ Nat. Size.

FAMILY 3. LASIOPYGIDÆ.

Subfamily 1. Lasiopyginæ.

GENUS 1. PAPIO. BABOONS.

$$\text{I. } \frac{2-2}{2-2}; \quad \text{C. } \frac{1-1}{1-1}; \quad \text{P. } \frac{2-2}{2-2}; \quad \text{M. } \frac{3-3}{3-3} = 32.$$

PAPIO Erxl., Syst. Regn. Anim., 1777, p. 15. Type *Papio sphynx* Erxleben, (nec Linn.), = *Papio papio* Desmarest.

Pavianus Frisch, Nat.-Syst. vierfüss. Thiere, in Tabellen, p. 19, 1775, "Der Pavian."

Cynocephalus Cuv. et Geoff., Mag. Encyclop., III, 1795, p. 462, (nec Boddært, 1768, Insect.).

Mandrillus Ritzen, Nat. Eintheil. Säugth., 1824, p. 33. (Tafel).

Mandril Voigt, Cuvier's Thierreich, I, 1831, p. 88.

Mormon Wagn., Schreb., Säugth. Suppl., I, 1839, p. 164.

Hamadryas Less., Spec. Mamm., 1840, p. 107, (nec Hübner, 1806 Lepidopt.).

Sphinx Gray, List Spec. Mamm. Brit. Mus., 1843, p. 6.

Choiropithecus Reichenb., Vollständ. Naturg. Affen, 1862, p. 151.

Drill Reichenb., Vollständ. Naturg. Affen, 1862, p. 160.

Chœropithecus Blainv., Leçons Orales, 1839, les Cynocephales.

Size large, face dog-like; muzzle elongate, end truncate, in which the nostrils are placed; body massive; tail of varied lengths; arms and legs nearly equal, and the species walk on their hands and feet; eyes directed downward; neck elongate; thumb prominent, reaching to the middle of the first joint of forefinger; cheek pouches present; ischiatic bones with large callosities, and in the mating season, in some species, these last are enormously enlarged and extend to the tail. Skin of face sometimes exhibiting brilliant colors. Skull: braincase flattened; on the rostrum of adult males, in some species, are developed longitudinal osseous ridges.

The members of the genus Papio, on account of the lengthened facial region of their skulls are called *Dog-faced* Baboons. Usually their bodies are massive, and the adult animal is possessed of great strength. The mode of progression is by walking or running on their hands and feet, and as their eyes are directed downward they are obliged to lift the overhanging eyebrows when they wish to look upward. The feet are long, and the palms of the hands and soles of the feet are laid flat upon the ground. They are considered the lowest of the Catarrhine, (with nostrils pointed downward), or Old World Monkeys, and as they are generally of large size they are dangerous animals when adult, possessing savage and ugly dispositions. They are gregarious and frequently go in large herds, in some instances of a hundred individuals, and their combined numbers render them formidable antagonists when disturbed. The canines are very long and pointed, and with them they are capable of inflicting very severe wounds. They utter various sounds, which may be termed barks, grunts, or screams, sometimes subdued low murmurs, and these in their various inflections are instantly comprehended by the other members of the herd, and acted upon at once, whether it may be for flight, pillage or combat. When engaged in any operation considered dangerous, a sentinel is always posted in some favorable place to give warning of a foe's approach, and enable the depredators to escape. There is much difference in size among the species, and the tails vary considerably in length, and are never prehensile. They are carried with a curve at the basal end and away from the body, the remaining portion hanging straight down. All the species possess callosities, or fleshy pads on the buttocks, and sometimes these are of large size and brilliantly colored, the hues usually intensified, especially those of the females, at particular periods. At such times the callosities of a female may increase to such a size as to cover nearly all the hinder parts, and when in this turgid condition, the colors are usually exceedingly vivid. In some species, on the rostrum, are developed several bony ridges which rise nearly to the level of the eyes, most conspicuous in the males, and the skin on these is brightly colored, thus adding considerably to the ugliness of the unattractive countenance. Usually the habitats of these animals are rocky places, such as ravines or hills where grass and trees are scarce. Rocky promontories, or hills where a wide sweep of surrounding plains is afforded, are favorite places, for these baboons are always on the watch, either for an opportunity to commit some depredation on a native's garden or field, or to escape from an approaching danger. Some species, however, live in dense forests, and climb even lofty trees readily. But as a rule they are dwellers in the open country where their view over the land is extensive. The baboon is almost omnivorous, but the principal food consists of fruits, bulbous roots, reptiles and insects, and to procure these last they are continually searching, and turning over stones beneath which the desired object may lie concealed.

The Baboons may be divided into four groups, the dark and light colored; the former containing P. PORCARIUS, P. DOGUERA, P. SPHINX, and their allies, and for the light hued group, P. CYNOCEPHALUS, P. STREPITUS, etc. Besides the brownish black and yellow species above mentioned, there is the gray style represented by P. PRUINOSUS, and the maned baboons such as P. HAMADRYAS; for while other species in all the different groups have long hairs on the back, yet in comparison with the hamadryas group this can hardly be correctly styled a mane. In general the recognized species have an ascertained and authentic locality accompanying the original descriptions, but some have been menagerie specimens, or dwellers in Zoological Gardens, and their original habitat is unknown. In some cases these examples have given rise to much confusion and doubt among Mammalogists, as it is not easy to determine them from descriptions, the coloring being so confused and difficult to indicate clearly; and without any geographical distribution of the species, or the type locality being known to guide one correctly, many mistakes have been made. In this genus a prominent instance of this is found in *P. anubis* F. Cuvier. This Author states he saw two specimens, but he does not say where, nor if they were living or dead. His description is only partial, the chief important statement being that the general pelage is "verdâtre foncé," and he gives an excellent plate of a green baboon, the like of which is not found in any collection to-day. On my visit to the Paris Museum, diligent search was made for this type specimen, but it could not be found, and there is no proof that it was ever in the National Collection.

Here then we have a description and figure of a baboon unlike any known to exist, without locality, and the type lost. There is no possible way conceivable by which this species can be identified, and to prevent further confusion and useless discussion it seems best to drop the name *anubis* from the genus PAPIO, and ignore it in the future. As a general thing, those examples which are received without authentic habitats, being chiefly individuals from Zoological Gardens, constitute the most unsatisfactory types for new species, and such a type in some cases is worse than none at all. *Anubis* is a case in point, and it would have been much better if Cuvier had never described nor figured it. Anderson in his Zoology of Egypt describes a baboon from the Nile valley which he calls *P. anubis,* but it answers neither to the description nor plate of Cuvier. Anderson's *P. anubis* is probably P. CYNOCEPHALUS, but as he does not state where his specimen came from except in a general way, it is impossible to identify it with certainty, but since he unites several species under *P. anubis* he may have given a general description without limiting himself to any one individual, and this seems to have been the fact and that P. CYNOCEPHALUS and P. DOGUERA were mixed together. The figure of *P. anubis* on his plate apparently represents P. DOGUERA.

LITERATURE OF THE SPECIES AND SUBSPECIES.

1758. *Linnæus, Systema Naturæ.*
SIMIA SPHYNX, the Mandrill, and S. HAMADRYAS, described.

1766. *Linnæus, Systema Naturæ.*
Among the species of *Simia* here given, the following belong to PAPIO: (*S.*) SPHINX; (*S.*) *maimon* = (*S.*) SPHINX; (*S.*) HAMADRYAS; and (*S.*) CYNOCEPHALUS first described.
The descriptions of all these species are brief and unsatisfactory, and in some instances really give no idea of the animal.

1777. *Erxleben, Systema Regni Animalis.*
In the genus PAPIO, this Author places the following species: *P. sphinx* (nec Linn.), = P. PAPIO (Desm.); and *P. maimon* = P. SPHINX (Linn.); P. NEMESTRINA; and *P. apeda* does not belong to the genus. In the genus *Cercopithecus,* (LASIOPYGA), however, two species of PAPIO are found, P. HAMADRYAS and P. CYNOCEPHALUS.

1782. *Brunnich, in Dyrenes Histoire udi Universitetes Natur-Theatre.*
PAPIO PORCARIUS first described as *Simia porcarius.*

1788. *Gmelin, Systema Naturæ.*
The species of PAPIO given by Erxleben are here repeated and placed in *Simia.* No new ones added.

1792. *Kerr, Animal Kingdom.*
PAPIO SPHINX (Linn.), renamed *Simia suilla,* and PAPIO HAMADRYAS, *Cercopithecus hamadryas ursinus.*

1797. *Audebert, Histoire Naturelle des Singes et des Makis.*
Under *Simia* three forms are given: PAPIO SPHINX, and var. A. and B. These all = P. PAPIO (Desm.).

1804. *Hermann, Observationes Zoologicæ.*
PAPIO PORCARIUS redescribed as *Simia sphingiola.*

1812. *E. Geoffroy Saint-Hilaire, in Annales du Muséum d'Histoire Naturelle, Paris.*
Seven species of PAPIO are given, divided into two groups A.

and B. The first is characterized as follows: A. *Os maxillaires à contours arrondis; le museau triangulaire; A. F.* 35°: *queue plus longue que le corps,* and contains P. CYNOCEPHALUS. B. *Os maxillaires au dessus et formés de deux plans verticaux; museau carré, long; A. F.* 30°: *queue moins longue que le corps ou plus petite,* with these species: P. PORCARIUS; *P. sphinx* (nec Linn.), = P. PAPIO (Desm.); P. HAMADRYAS; *P. comatus* = P. PORCARIUS; and *P. maimon* = P. SPHINX (Linn.).

1818. *F. Cuvier, in Mémoires du Muséum d'Histoire Naturelle, Paris.* *P. cynocephalus* redescribed as *Cynocephalus babuin.*

1820. *Kuhl, Beiträge zur Zoologie und vergleichenden Anatomie.* Under PAPIO are given the following species: *P. silenus* = P. ALBIBARBATUS Kerr, which is a PITHECUS; P. CYNOCEPHALUS; *P. sphinx* (nec Linn.), = P. PAPIO (Desm.); *P. comatus* = P. PORCARIUS; P. PORCARIUS; P. HAMADRYAS; and *P. mormon* Geoff., = P. SPHINX (Linn.). Under *Inuus* is placed P. LEUCOPHÆUS (F. Cuv.).

1820. *Desmarest, Mammalogie ou Descriptions des Espèces de Mammifères.* The species of PAPIO are placed by this Author in the genus *Cynocephalus,* divided into two sections. *Ier. Sous-genre Babouins. Une queue plus longue ou à peu près aussi longue que le corps.* (*C.*) CYNOCEPHALUS; (*C.*) PAPIO (*sphinx* Auct. nec Linn.); (*C.*) PORCARIUS; (*C.*) HAMADRYAS. *IIme. Sous-genre. Mandrill. Une queue tres courte et grêle, perpendiculaire a l'épine dorsale.* (*C.*) *mormon* (Linn.), = S. SPHINX Linn.; and *C.* LEUCOPHÆUS (F. Cuv.).

1825. *F. Cuvier, Histoire Naturelle des Mammifères.* *Papio anubis* described as *Cynocephalus anubis,* without locality. Species undeterminable. Type lost, locality unknown.

1828. *L. Agassiz, in Isis.* PAPIO HAMADRYAS redescribed as *Cynocephalus wagleri.*

1829. *J. B. Fischer, Synopsis Mammalium.* Among the species included in *Simia* are the following belonging to PAPIO: (*S.*) CYNOCEPHALUS; (*S.*) ANUBIS, undeterminable; (*S.*) *sphinx* = P. PAPIO (Desm.); (*S.*) PORCARIUS; (*S.*) *sphingiola* Herm., = P. PORCARIUS Brunn.; (*S.*) HAMADRYAS; (*S.*) *maimon* = P. SPHINX (Linn.); (*S.*) LEUCOPHÆA.

1830. *J. B. Fischer, Addenda, Emendanda et Index ad Synopsis Mammalium.* The list given in 1829, is here repeated without additions.

1840. *Wagner, Schreber, Die Säugthiere in Abbildungen nach der Natur mit Beschreibungen. Supplementband.*
Under the genus *Cynocephalus* seven species are placed, six of which belong to PAPIO: (*C.*) HAMADRYAS; (*C.*) *babuin* = P. CYNOCEPHALUS; (*C.*) *sphinx* = P. PAPIO (Desm.); (*C.*) *ursinus* = P. PORCARIUS; (*C.*) *mormon* = P. SPHINX (Linn.); and (*C.*) LEUCOPHÆUS. (*C.*) GELADA belongs to the genus THEROPITHECUS.

1840. *R. P. Lesson, Species des Mammifères Bimanes et Quadrumanes.*
The genus *Cynocephalus* in this work has two subgenera: the 1st. CYNOPITHECUS with two species *C.* NIGER, and *C. speciosus* = PITHECUS FUSCATUS. The 2nd subgenus is PAPIO divided into three Tribes: Les Gelades, with one species *Papio gelada* = THEROPITHECUS GELADA. 2nd. *Les vrais Papions ou sphynx,* with two species; *Papio babuin* = P. CYNOCEPHALUS, and *P. sphinx* (nec Linn.), = P. PAPIO (Desm.). 3rd. *Tartarins, Hamadryas. Singes à crinière,* with two genera and one subgenus. The first is *Hamadryas chœropithecus* = PAPIO HAMADRYAS; and second, the subgenus *Mormon,* Mandrill, with two species *Mormon maimon* = PAPIO SPHINX (Linn.); and *Mormon drill* = PAPIO LEUCOPHÆUS (F. Cuv.). Altogether it is about as confusing and inaccurate an arrangement as could be devised.

1843. *Ogilby, in Proceedings of the Zoological Society of London.*
PAPIO CYNOCEPHALUS redescribed as *Cynocephalus thoth,* and *Papio sphynx* = P. PAPIO (Desm.), redescribed as *Cynocephalus choras.*

1843. *J. E. Gray, List of Specimens of Mammalia in the Collection of the British Museum.*
In this list six species of PAPIO are recorded under Cynocephalus, viz.: (*Cynocephalus*) *hamadryas* = P. HAMADRYAS; (*Cynocephalus*) PORCARIUS; (*Cynocephalus*) *babuin* = P. CYNOCEPHALUS; (*Cynocephalus*) *sphinx* = P. PAPIO (Desm.); *Papio maimon* = P. SPHINX (Linn.); and PAPIO LEUCOPHÆA.

1844. *H. R. Schinz, Systematisches Verzeichniss aller bis jetzt bekannten Säugethiere oder Synopsis Mammalium nach dem Cuvier'schen System.*
PAPIO PORCARIUS renamed *Cynocephalus ursinus.*

1848. *I. Geoffroy St. Hilaire, in Annales du Muséum d'Histoire Naturelle, Paris.*
Papio papio redescribed as *Cynocephalus olivaceus.*

1851. *I. Geoffroy Saint-Hilaire, Catalogue des Primates.*
In his Catalogue of the specimens of Primates in the Paris Museum under the genus *Cynocephalus,* the following species of Papio are recorded: (*C.*) hamadryas; (*C.*) *sphinx* = *P.* papio (Desm.); (*C.*) *olivaceus* = P. papio; (*C.*) *babuin* = P. cynocephalus; (*C.*) porcarius; (*C.*) leucophæus; and (*C.*) *mormon* = P. sphinx (Linn.).

1852. *W. H. C. Peters, Naturwissenschaftliche Reise nach Mossambique.*
A young baboon, probably P. cynocephalus described as *Cercopithecus ochraceus.*

1853. *C. J. Temminck, Esquisses Zoologiques sur la Côte de Guinée.*
P. sphinx (Auct. nec Linn.), = P. papio (Desm.), redescribed as *Papio rubescens.*

1855. *Wagner, Schreber, Die Säugthiere in Abbildungen nach der Natur mit Beschreibungen. Supplementband.*
In the genus *Cynocephalus* the following species of Papio are included: (*C.*) hamadryas; (*C.*) *babuin* = P. cynocephalus; (*C.*) *anubis* undeterminable, but is made var. B. of (*C.*) *babuin* = P. cynocephalus; (*C.*) *sphinx* = P. papio (Desm.); (*C.*) *ursinus* = P. porcarius; (*C.*) *mormon* = P. sphinx (Linn.); (*C.*) leucophæus; and (*C.*) *thoth* Ogilby, is considered the same as *anubis,* which is an error as this animal is a yellowish baboon, not grown, and equals P. cynocephalus; while *P. anubis* is described as a dark green baboon, 'verdâtre foncé,' quite unlike *P. thoth,* or any other known species.

1862. *Reichenbach, Die Vollständigste Naturgeschichte der Affen.*
The genus Papio in this work contains the following: P. *sphinx* (nec Linn.), = P. papio (Desm.); P. *babuin* = P. cynocephalus; P. *anubis* undeterminable; P. doguera; P. *olivaceus* = P. papio; and subgenera A. *Cheiropithecus,* with P. porcarius; and B. *Cynocephalus,* with P. hamadryas; and P. *moco,* undeterminable; and C. Theropithecus, recognized in this Review as an independent genus with P. gelada and P. *senex* = T. gelada; and P. obscurus. *Mormon,* with *M. maimon* = P. sphinx (Linn.); and P. leucophæus; and Cynopithecus, a distinct genus of the Black Apes of Celebes.

1870. *J. E. Gray, Catalogue of Monkeys, Lemurs and Fruit-eating Bats, in the Collection of the British Museum.*
In this publication the Author places the members of Papio in Tribe Cynocephalina, and divides the species into four genera: *Hamadryas* with *H. ægyptiaca* = Papio hamadryas as its sole species; *Cynocephalus* with five species: C. porcarius; *C. anubis* undeterminable; *C. thoth* = P. cynocephalus; and *C. babuin* = P. cynocephalus. *Chæropithecus,* with C. leucophæus; and *Mormon,* with *M. maimon* = P. sphinx (Linn.), and P. doguera Pucheran. P. cynocephalus (Linn. et Auct.), did not seem to have been known to Dr. Gray.

1876. *Schlegel, Muséum d'Histoire Naturelle des Pays-Bas, Simiæ.*
In this work are recorded the examples of Papio contained in the Museum of Natural History at Leyden, Holland, under the species recognized by the Author, nine in number. They are P. porcarius; *P. anubis* undeterminable; P. doguera; *P. sphinx* = P. papio (Desm.); P. cynocephalus; *P. rubescens* = P. papio (Desm.); P. hamadryas; *P. maimon* = P. sphinx (Linn.), and P. leucophæus. In his text p. 129, the Author suggests that *C. thoth* Ogilby, may be the same as P. hamadryas, as he considers that the one figured by Fraser, Zool. Typica, under that name undoubtedly is that species. But *C. thoth* Ogilby, is the same as *S.* cynocephalus Linn., and in no way resembles P. hamadryas.

1892. *Matschie, in Sitzungsberichte der Gesellschaft Naturforschender Freunde zu Berlin.*
Papio cynocephalus redescribed as *Cynocephalus langeldi.*

1893. *O. Thomas, in Annals and Magazine of Natural History.*
Papio ibeanus described as *Papio thoth ibeanus.*

1896. *O. Thomas, in Proceedings of the Zoological Society of London.*
Papio pruinosus first described.

1898. *Matschie, in Sitzungsberichte der Gesellschaft Naturforschender Freunde zu Berlin.*
Papio anubis? neumanni, Papio heuglini and Papio yokoensis first described.

1899. *O. Thomas, in Proceedings of the Zoological Society of London.*
Papio hamadryas arabicus first described.

1902. *Hon. W. Rothschild, in Novitate Zoologicæ.*
A female example of Papio, is named *P. lydekkeri,* but beyond

"hairs unicolor" no description is given, and the name is a *nomen nudum.*

1902. *J. Anderson, Zoology of Egyptian Mammalia.*
In this work Papio has P. hamadryas; *P. anubis* (desc. no plate), undeterminable, and P. pruinosus. By recognizing only these species of baboons the following arrangement is effected: *P. a. neumanni* Matschie, and P. heuglini Matschie, and *Cynocephala* doguera Pucheran, are made synonyms of *P. anubis*! *P. babuin* Cuv., and *P. thoth* Ogilby, and *P. t. ibeanus* Thos., become synonyms of P. cynocephalus! As *P. anubis* Cuv., is quite undeterminable, no example of a baboon like his description and plate being known, it is probable that Anderson mistook a specimen of P. cynocephalus for *anubis,* therefore all his Papio would belong to that species, according to his views as above given.

1907. *D. G. Elliot, in Annals and Magazine of Natural History.*
Papio strepitus, and Papio furax first described.

1909. *D. G. Elliot, in Annals and Magazine of Natural History.*
Papio tessellatum, P. nigeriæ, and P. brockmani first described.

GEOGRAPHICAL DISTRIBUTION OF THE SPECIES AND SUBSPECIES.

The middle portion of the African Continent between the great lakes and the Atlantic Ocean, is not yet sufficiently well known for us to indicate what species of Papio may be found in it, or to specify what may be the ranges within its boundaries of the described species which may penetrate within its limits. East Africa contains the greatest number of the known species of Papio, and beginning in the northern part we find that P. cynocephalus ranges from Nubia, through the Soudan, its exact southern limit not yet ascertained. In the country between the Atbara River and the Bahr el Abiad, an allied form P. heuglini is found. In Abyssinia P. doguera and P. hamadryas occur, and at Derra Dowa near the boundary of Somaliland, P. brockmani has been obtained. At Lamu, at the mouth of the Tana River, *P. ibeanus* was procured. At Donga Ngai, Masailand, P. neumanni was taken, and west of the Victoria Nyanza at Mulema, Ankole, P. tessellatum was found. North west of Mt. Kenia at Baringo, P. furax occurs; and in Nyassaland at Lesumbwe, on Livingstone's Peninsula, Lake Nyassa, P. pruinosus was procured; and at Fort Johnston on the north of the same lake, P. strepitus was met with. In West Africa, in Northern Nigeria towards Lake Chad, P. NIGERIÆ is found, and on the coast from Senegal to Guinea, P. PAPIO ranges. From Senegambia to the Congo P. SPHINX occurs. Three species inhabit Cameroon: P. LEUCOPHÆUS in the northern portion, P. YOKOENSIS in the central part, and P. PLANIROSTRIS in the southwestern portion. In South Africa from the River Limpopo to the Cape, P. PORCARIUS occurs. The last form, a race of P. HAMADRYAS, *P. h. arabicus* is found in Arabia northwest of Aden.

KEY TO THE SPECIES AND SUBSPECIES.

- A. General color dark.
  - *a.* Nose not extending beyond lips.
    - *a.*′ Hands and feet black.
      - *a.*″ Hairs purplish black with two bands of cream buff ....*P. nigeriæ.*
      - *b.*″ Hairs black banded with raw sienna....*P. doguera.*
    - *b.*′ Hands black and tawny; feet black......*P. tessellatum.*
    - *c.*′ Hands black, feet black and buff.
      - *a.*″ Hairs seal brown, subterminal band buff ....*P. furax.*
      - *b.*″ Hairs purplish brown banded with buff and black ....*P. yokoensis.*
      - *c.*″ Hairs black, subterminal band tawny ochraceous or cream buff...........*P. heuglini.*
    - *d.*′ Hands and feet ochraceous buff and black.
      - *a.*″ General color red ....*P. papio.*
      - *b.*″ General color dull greenish white......*P. ibeanus.*
  - *b.* Nose extending beyond lips...................*P. porcarius.*
- B. General color yellowish.
    - *a.*′ Hands and feet ochraceous............*P. cynocephalus.*
    - *b.*′ Hands and feet blackish brown...........*P. neumanni.*
    - *c.*′ Hands ochraceous buff and black, feet ochraceous ....*P. strepitus.*
    - *d.*′ Hands blackish, feet seal brown and grayish white ....*P. pruinosus.*
- C. General color grayish brown or reddish brown.
  - *a.* Mantle covering shoulders and fore part of body.
    - *a.*′ Size large.

a.″ Mantle grayish brown; tooth rows curved .... *P. hamadryas.*
b.″ Mantle pale reddish brown, tips of hairs silvery white; tooth rows straight .... *P. brockmani.*
b.′ Size small .... *P. h. arabicus.*
b. Without mantle.
a.′ Rostrum longer than braincase.......... *P. planirostris.*
b.′ Rostrum equal to, or shorter than braincase.
a.″ Face brightly colored .... *P. sphinx.*
b.″ Face black .... *P. leucophæus.*

Subgenus Chæropithecus.

Size generally large; colors dark; mane absent; tail not tufted.

PAPIO NIGERIÆ Elliot.

Papio nigeriæ Elliot, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 247.

NIGERIA BABOON.

Type locality. Ibi, North Nigeria, Western Africa. Type in British Museum.

Genl. Char. General color mottled black and cream color; size large; skull, compared with that of P. HEUGLINI from the Soudan, has the ridges on sides of rostrum less elevated; rostrum much narrower, being 39.2 to 46.2; septum between orbits much narrower, 13 to 15.3; lateral pits not as deep; palate narrower; teeth much smaller, and the length of molar series shorter by nearly half the length of the posterior molar of P. HEUGLINI.

Color. General color of top of head, and upper parts and sides to rump, mixed black and cream color, the latter most prominent, the hairs being purplish brown, with two bands of cream color and black tip. The purple under color shows through the cream and black producing a gray shade; hairs of rump and lower back have bands of ochraceous giving this part a reddish hue; face and chin naked, black; throat grayish, chest similar to back; abdomen like rump, bands ochraceous; arms similar to back to below elbows, when the black predominates to the wrists and hands, which are almost entirely black; legs redder, being tawny on thighs growing lighter to the ankles which are buff yellow; feet black; tail cream color and olive mixed, the former color predominating. Callosities large, color lost in skin. Ex type British Museum.

Measurements. Size equal to P. PORCARIUS or P. DOGUERA. Skull: occipito-nasal length, 181; Hensel, 153; zygomatic width, 133; intertemporal width, 60.9; palatal length, 97.5; width of braincase, 86.4; median length of nasals, 81.1; length of upper molar series, 53.9; length of mandible, 168; length of lower molar series, 71.1. Ex type British Museum.

This is a very large, dark baboon, the pelage exhibiting a mixture of cream color and black with purple under color showing, and grading into the tawny hue of lower back and legs. The skull shows the most trenchant characters and is markedly different from its probably nearest ally, in its smaller teeth and shorter tooth row. Two specimens are in the British Museum Collection.

PAPIO DOGUERA (Pucheran et Schimpfer).

Cynocephalus doguera Puch. et Schimp., Rev. Mag. Zool., 1856, p. 96; 1857, p. 250; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 262; Anders., Cat. Mamm. Ind. Mus. Calc., Pt. I, 1881, p. 81; *Id.* Zool. Egypt., Mamm., 1902, p. 41, pl. VII, (skull).

Cynocephalus babouin Rüpp., Neue Wirbelth. Säugth., I, 1835, p. 7, (Part.).

Papio doguera Reichenb., Vollständ. Naturg. Affen, 1862, p. 150; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 126; Forbes, Handb. Primates, I, 1894, p. 262; Pousarg., Ann. Scien. Nat., II, 7me Sér., 1896, p. 236; Elliot, Cat. Mamm. Field Columb. Mus., F. C. M. Pub., VIII, 1906, p. 566, Zool. Ser.

Cynocephalus porcarius Fitz. und Heugl., Syst. Uebers., 1866, p. 6; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 64, (nec Bodd.).

DOGUERA BABOON.

Type locality. Abyssinia. Type in Paris Museum.

Geogr. Distr. Interior of Abyssinia, Kavirondo, Lakes Natron and Mangara, (Neumann); Takale and Schillouek, (Heuglin).

Color. Face black; hairs of upper parts and limbs black banded with ochraceous buff, the general appearance however is ochraceous buff with broad bands of black, just the opposite to the real coloring of the hairs, but they overlap each other in such a manner as to produce the effect described; wrists and hands black; feet mixed black and tawny ochraceous; under parts black, hairs ringed with buff on the chest, and inner side of limbs and arms above elbows; ochraceous on the abdomen and inner side of legs; tail at base black like back, hairs ringed with buff, remainder ochraceous and black. Ex type Paris Museum.

Measurements. Type. Total length, 1,678.40; tail, 609.60; foot, 215.20. Skull in specimen.

Papio tessellatum Elliot.

Papio tessellatum Elliot, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 247.

Type locality. Mulema, Ankole, Uganda, Africa. Type in British Museum.

Color. Hairs throughout on head, neck and body seal brown, with a broad subterminal band of a darkish cream color, and tips black. This gives a checkered appearance to the animal, as on the surface the cream color and black only appear. Arms mostly dark cream color, the black tips of the hairs forming distinct lines on the upper and lower side; wrists black, as are the hands, with a small patch of tawny on the backs; legs dark cream color mixed with black, the latter seen mostly on the lower inner side; feet black; tail cream color, the hairs being seal brown on basal half, remainder cream color to tip; upper part of throat, and sides of the head grayish white; face black. Ex type British Museum.

Measurements. Total length, 1,400; tail to end of hair, 500; foot, 210. Skull: occipito-nasal length, 170; Hensel, 158.1; zygomatic width, 131.1; intertemporal width, 60.9; palatal length, 94; median length of nasals, 80; width of braincase, 85.6; length of upper molar series, 58.3; length of upper canines, 43.1; length of mandible, 150; length of lower molar series, 66. Ex type British Museum.

Two specimens of what I consider the same species, the type and a young animal from Rogoro, are in the British Museum Collection. The type is a very large animal, and the rather unusual distribution of colors serves to make it very conspicuous when placed with other species of the genus. The type was procured by Col. G. Delmé-Radcliffe, and the Rogoro example by C. S. Belton, Esq. The facial region equals in length that of the braincase, the rostrum is broad, and the nasals are rounded and raised above the plane of the rostrum; lateral pits large and deep posteriorly; a small process on the frontal ridge over each orbit near end of nasals, curving downward and inward, and pointed; teeth large; upper canines very long and sharply pointed.

PAPIO FURAX Elliot.

Papio furax Elliot, Ann. Mag. Nat. Hist., XX, 7th Ser., 1907, p. 499.

Type locality. Baringo, north west of Mt. Kenia, East Africa. Type in British Museum.

Genl. Char. Similar to P. DOGUERA from Abyssinia, but darker, and cranial characters different. The rostrum is shorter, broader and flatter, and the nasals do not rise above the plane of the rostrum, and are flat, not rounded; palate flatter; the distance from last molar to palatal arch is much greater; width of braincase and intertemporal width are much less; zygomatic width less, and the pit on side of jaw, broader, shorter, and not so deep.

Color. General hue seal brown, the hairs banded with buff, becoming ochraceous buff on the rump; the black tips of the hairs forming bands of black over the ochraceous buff; limbs black and cream color, the hairs being banded with those hues, and having black tips; chest black and cream color, abdomen black, hairs banded with ochraceous buff; hands mixed black and ochraceous buff; feet black, with base of hairs buff; tail mixed black and whitish yellow. Ex type British Museum.

Measurements. Size about the same as P. DOGUERA. Skull: total length, 196; occipito-nasal length, 166; Hensel, 141; intertemporal width, 56; zygomatic width, 122; palatal length, 93; breadth of braincase, 82; median length of nasals, 77; length of upper molar series, 48; length of mandible, 145; length of lower molar series, 65. Ex type British Museum.

Compared with Abyssinian specimens of P. DOGUERA this is a much darker animal, the bands are paler and more yellow; DOGUERA being more ochraceous, and showing less of the black. The general tone of the Baringo specimen inclines to a grayish brown, and the Abyssinian to ochraceous buff.

PAPIO YOKOENSIS Matschie.

Papio yokoensis Matschie, Sitzungsb. Ges. Naturf. Freund., Berlin, 1900, p. 89.

Type locality. Yoko, Middle Cameroon, West Africa. Type in Berlin Museum.

Color. Top of head, shoulders, arms to elbows, and upper part of back, the base of hairs purplish brown, then banded with black and buff; middle of back, rump and flanks, the hairs brownish black at base banded with ochraceous to tips; forearms and hands banded with black and buff; sides of head purplish gray, tips buff; chest hairs purplish gray at base banded with buff and black; hairs on abdomen banded with black and ochraceous; thighs, legs and feet with hairs banded with black and ochraceous buff; hairs of tail buff banded with black. Ex type Berlin Museum.

Measurements. Length of head and body, 990; tail, 700. Skull: total length, 215; occipito-nasal length, 152; intertemporal width, 60; nasals lacking; length of upper canines, 46.5; length of upper molar series, 57; length of mandible, 165; length of lower molar series, 77. Ex type Berlin Museum.

This form in general appearance is yellowish brown with a red tinge on rump, flanks, and hinder part of legs.

PAPIO HEUGLINI Matschie.

Papio heuglini Matschie, Sitzungsb. Ges. Nat. Freund., Berlin, 1898, pp. 77, 81; Anders., Zool. Egypt., Mamm., 1902, pp. 38-42, pl. V, (skull of type).

HEUGLIN'S BABOON.

Type locality. Bahr el Azrek, Soudan, Africa. Type in Hamburg Museum.

Geogr. Distr. Country bounded by the Bahr el Abied, Bahr el Azrek, and Atbara, Soudan.

Genl. Char. Paler than P. DOGUERA; the sides of the body very like the P. CYNOCEPHALUS style.

Color. Upper parts tawny ochraceous, darkest on dorsal line grading to the sides into a cream color. The hairs are black with a subterminal broad bar of tawny ochraceous or cream buff, with intervening shades. Not much black is shown on the upper parts, the general color being as stated above. Arms above elbows ochraceous buff; forearms and hands black; outer side of legs similar to arms but with a brownish tinge; feet mixed black and buff; tail pale yellowish brown; under parts blackish brown and ochraceous.

Measurements. Skull: total length, 214; occipito-nasal length, 178; Hensel, 153; zygomatic width, 127.6; intertemporal width, 60.8; palatal length, 100; breadth of braincase, 86.3; median length of nasals, 82; length of upper molar series, 57.8; length of mandible, 164; length of lower molar series, 73; length of upper canines, 42.2.

The type of this species is in the Hamburg Museum, and a paratype, an immature animal, is in the Berlin Museum. The above description was from a specimen in the British Museum, taken on the Raw Sur River in the Bahr el Ghazal, by Captain H. E. Haynes.

The skull resembles those from Ankole, Uganda, but has very much larger molars, the upper series measuring in total length, 57 mm. to 48 mm. in the other; and the lower 73 mm. to 65 mm. The palate is longer and broader, the lateral pits are longer and narrower, and the mandible is longer. The nasals are also wider anteriorly. A remarkable peculiarity of the upper molars consists in the presence of small supplementary interior cusps at the base of the division between the interior cusps. These are irregular in number, from one to three, the last being on the right posterior molar, while the left posterior molar has only one, but with a posterior split, as if another cusp might be there developed. These supplementary cusps are visible, although not very clearly in the plate, made from a photograph of the type skull in Anderson's work. (l. c.). This is a large rather reddish baboon, and the skull is easily recognizable by the large teeth which exceed in size those of all other species of the dark colored baboons.

Papio papio (Desmarest).

Simia sphinx (nec Linn.), Erxl., Syst. Reg. Anim., 1777, p. 15, (Part.); Bodd., Elench. Anim., 1784, p. 56; Audeb., Hist. Nat. Singes et Makis, 1797, 3me Fam., p. 5, pls. I, II, III; Fisch., Syn. Mamm., 1829, p. 34, (Part.).

Papio sphinx E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 103; Kuhl, Beitr. Zool., 1820, p. 19; Reichenb., Vollständ. Naturg. Affen, 1862, p. 147, figs. 345, 346, 373-379; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 127; Forbes, Handb. Primates, I, 1894, p. 269; Pocock, Proc. Zool. Soc. Lond., II, 1906, p. 568, (et Auct.).

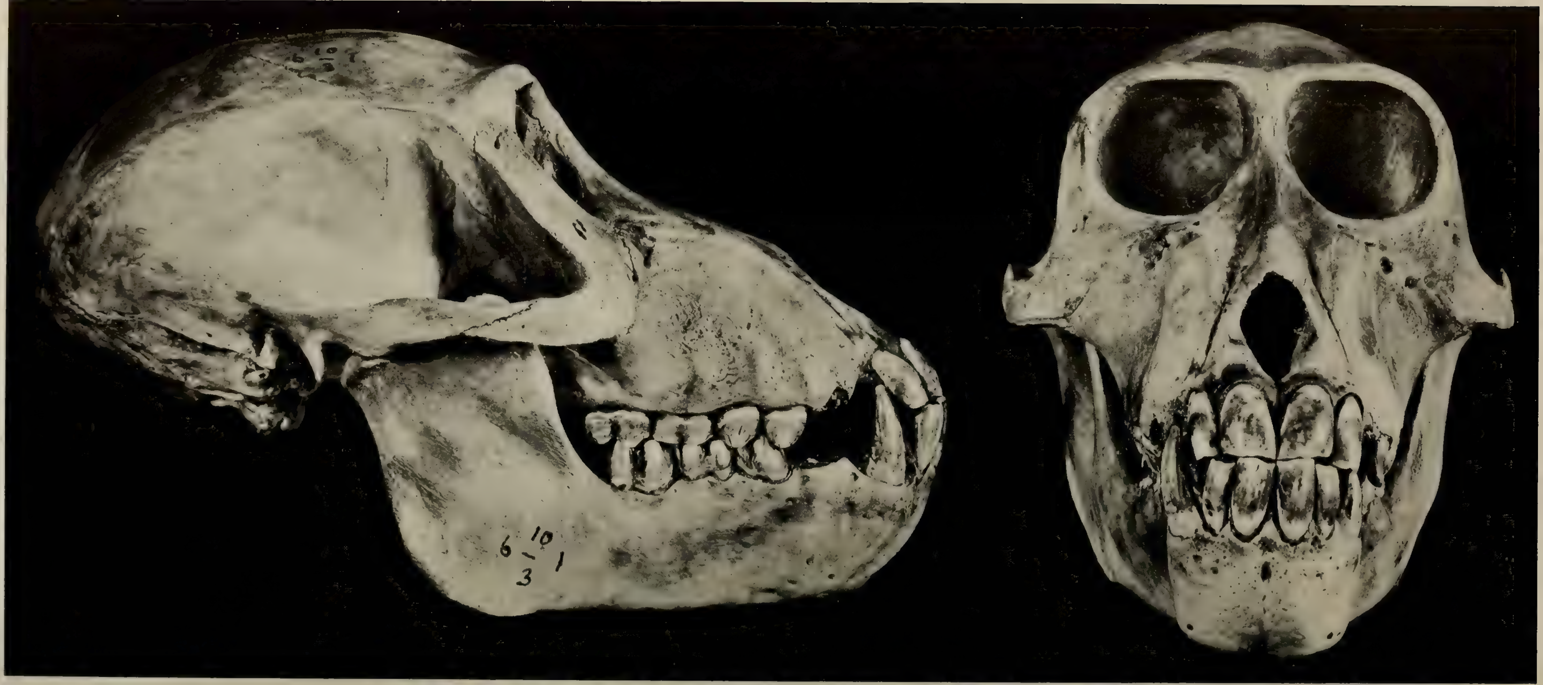
Le Papion F. Cuv., Hist. Nat. Mamm., 1819, Livr. VI, pls. VI, ♂, VII, ♀.

Cynocephalus papio Desm., Mamm., p. 69.

Cynocephalus sphinx Wagn., Schreb., Säugth. Suppl., I, 1840, p. 160; V, 1855, p. 64; I. Geoff., Cat. Primates, 1851, p. 34; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 131, 136; Mivart, Proc. Zool. Soc. Lond., 1865, p. 582; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 35.

Cynocephalus choras Ogilby, Proc. Zool. Soc. Lond., 1843, p. 12.

Cynocephalus olivaceus I. Geoff., Ann. Mus. Hist. Nat. Paris, 1848, p. 543; *Id.* Cat. Primates, 1851, p. 34; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 125.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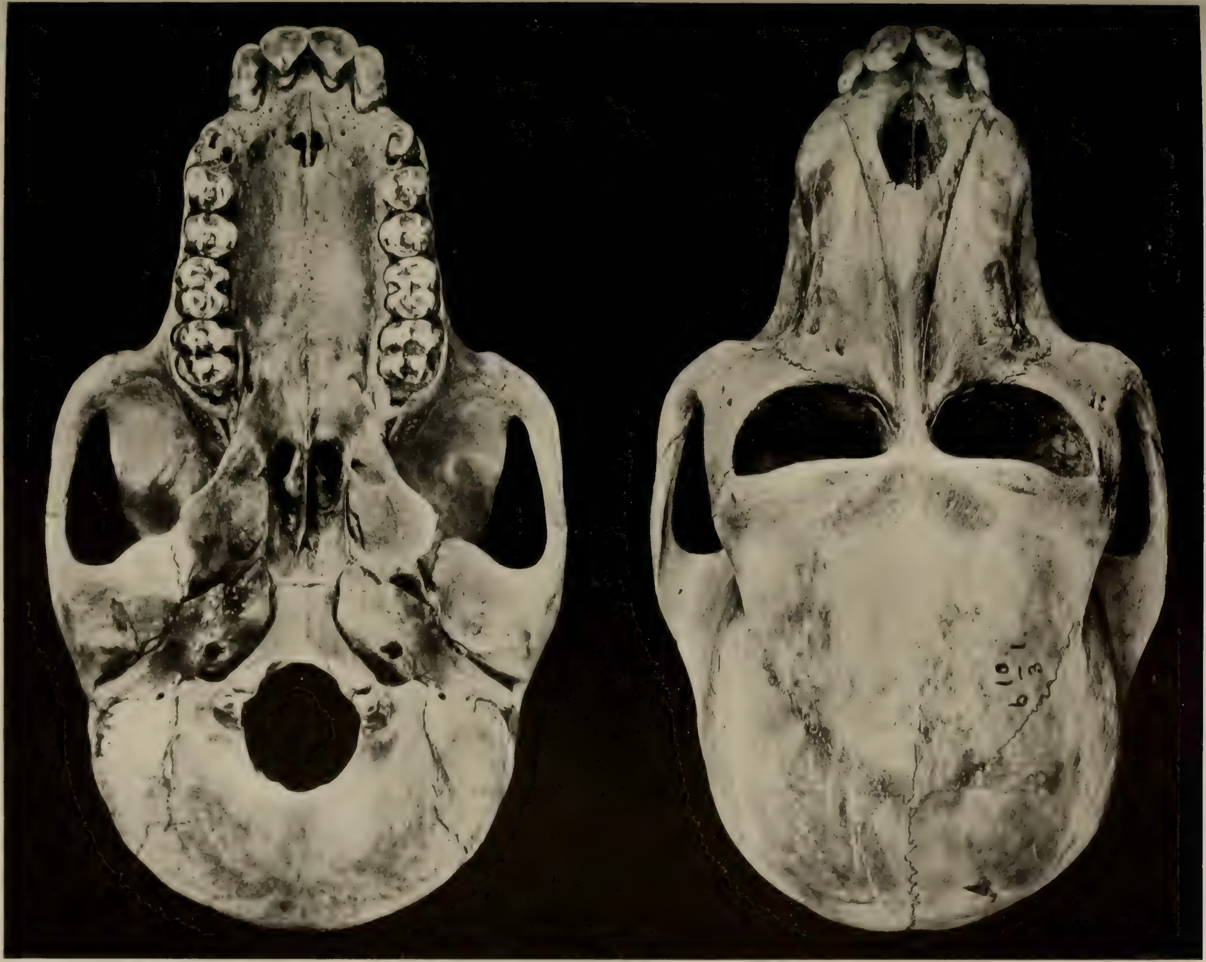


Papio papio.

No. 10.6.3.1. Brit. Mus. Coll. ¾ Nat. Size.

Papio rubescens Temm., Esquis. Zool., 1853, p. 39; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 128.

Papio olivaceus Reichenb., Vollständ. Naturg. Affen, 1862, p. 150.

GUINEA BABOON.

Type locality. "l'Afrique."

Geogr. Distr. Senegal to Angola, West Africa.

Genl. Char. Size small; face, ears, palms and soles of feet naked; tail shorter than body; ears quadrangular.

Color. Face, ears, palms of hands, and soles of feet black; upper eyelids white; head and upper parts, limbs and feet, tawny ochraceous, giving a general reddish appearance to the entire animal; under parts and inner side of limbs brownish yellow; hands blackish, hairs black with yellow tips; tail at base like back, remainder paler. Callosities red.

Measurements. Skull: total length, 178; occipito-nasal length, 146; Hensel, 129; zygomatic width, 110; intertemporal width, 59; palatal length, 74; breadth of braincase, 79; median length of nasals, 37; length of upper molar series, 49; length of mandible, 123; length of lower molar series, 56. Adult, but not old skull.

The type of *C. choras* Ogilby, is in the Collection of the British Museum and has been examined. It is somewhat lighter than typical P. PAPIO but not so red, but it is probable that the specimen may have faded somewhat in the sixty years it has been in the Museum. There is nothing in its coloration to warrant its separation from typical P. PAPIO.

The type of *P. rubescens* Temm., is in the Leyden Museum. It is an immature animal of a paler or more rusty red than P. PAPIO (Desm.), the hairs on the shoulders and back are very long and barred with black, while the cheeks are covered with white hairs. Another specimen, also young, from the Gold Coast, and labelled *P. rubescens*, is much darker, more the color of P. PAPIO. In view of their immaturity, the dissimilarity in color between the specimens, and their locality being the same as P. PAPIO, I should refer these examples to that species, as they present no characters that would separate them from it.

The type of *C. olivaceus* I. Geoffroy, is in the Paris Museum and the following is a description of it.

Color. Entire body and hind limbs mixed blackish brown and tawny ochraceous; the hairs with a strong reddish tinge, being dark brown at base, and ringed with black and tawny ochraceous; top of head yellowish brown; nape and hind neck like body; whiskers silvery gray at base, pale yellow at tips; shoulders and arms, mixed yellow, brown, and black, similar in color, but paler than body; hands and feet blackish brown speckled with pale yellow; under parts grayish white with a reddish tinge; tail blackish brown, hairs ochraceous at base near root of tail.

Measurements. Total length, 863.60; tail, 323.85; foot, 139.70. Ex Desmarest's type, Paris Museum.

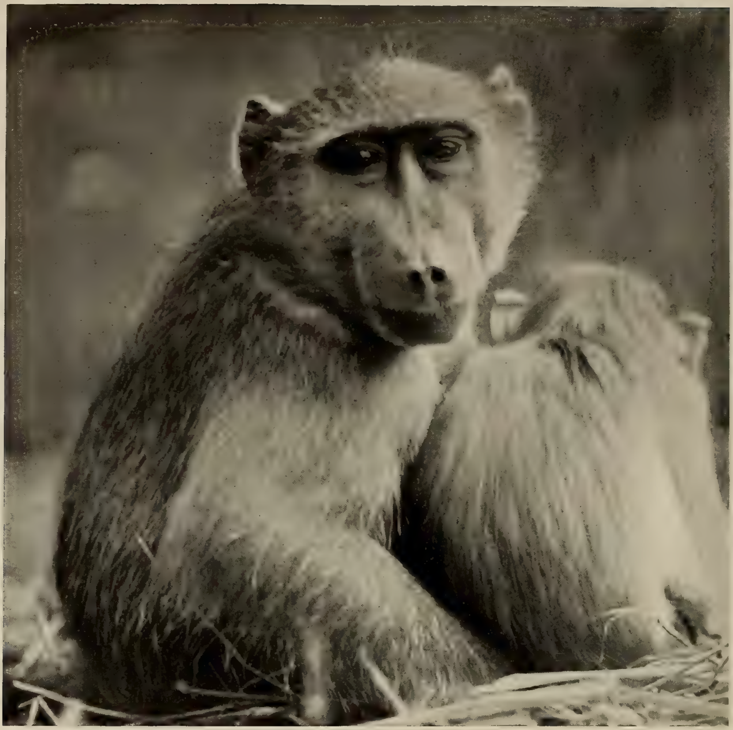
This animal is a female and not full grown. It has the reddish coloring so characteristic of P. PAPIO, and nothing of an olivaceous hue to warrant the name given by Geoffroy.

In a letter to Dr. Gray, J. J. Monteiro, gives the following account of what is probably this species, under the name of *anubis,* as observed by him in Angola, of which a ♂, and ♀, were presented to the British Museum. The country is hilly and cut by deep, dry and solitary gullies, and grand rocky ravines. The vegetation is restricted to dry, prickly shrubs, a few roots of grass, and certain species of thick club-stemmed dwarf shrubs, bearing a few leaves only during the few months of the year in which rain falls; the rest of the year nothing is seen but dry rock and leafless firewood, scorched and burnt month after month by the constant tropical sun. At distances far apart, brackish water is sparingly obtained by Zebras, these Monkeys, and other tropical animals, by excavating holes in the sand at the bottom of the gullies.

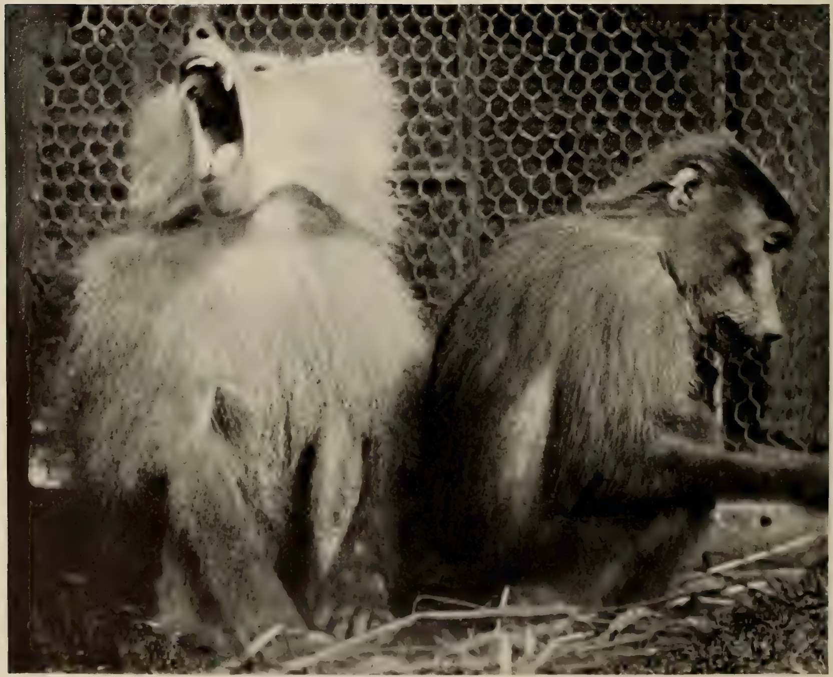
The principal food of these Apes is the root and stem of the thick, tuber rooted shrubs (*Webwitschia*?) above mentioned. Part of the root of these plants grows above the surface of the ground, and these Monkeys gnaw it off as a sheep does a turnip or mangel-wurzel, their dog-like elongated jaws, and perhaps dentition, appearing to him specially adapted to this manner of feeding.

They are gregarious; he once counted fifteen together, and a few days previous to his writing, not less than thirty to forty came down to drink at a well he had opened at the copper mines. He was then engaged in exploring at about four miles inland from Cuio Bay. Two were captured alive at Equimena, a place twelve miles south.

They run very fast, on all-fours, in a kind of sideway gallop, the young ones holding on to the back of the dams. It seems that he has not been able to ascertain exactly their geographical distribution either in longitude or latitude from the bay, though he believes it does not reach northward of the River Quanza. "It perhaps deserves to be mentioned that in the vicinity of the rivers in that part of the coast, the vegetation assumes a more luxuriant character; but these rivers



Papio porcarius.



Papio hamadryas.

being few and far apart, this does not alter the dry, bare character of the country where these Monkeys abound.

"The natives, and the Portuguese about these parts, affirm that a troop of these Monkeys is always preceded by several scouts, which communicate by signals either danger or safety to the rest, and that these scouts are set upon and punished if any mistake is committed by them. The two sent by my son were hunted down by the blacks with dogs, and killed with sticks."

Papio ibeanus Thomas.

Papio thoth ibeanus Thos., Ann. Mag. Nat. Hist., XI, 6th Ser., 1893, p. 46.

Papio ibeanus Forbes, Handb. Primates, I, 1894, p. 269.

Type locality. Lamu, East Africa. Type in British Museum.

Color. Fur shaggy, blackish and dull greenish white, without any bright yellow; hairs on crown broadly ringed with black; chin and throat whitish, hairs of chest with black and white rings; belly black and dull fawn; inner side of arms like the chest, and of the legs clearer, and the rings less fawn color; hairs on outer side of limbs slaty gray at base, then ringed with black and whitish fawn; hands and feet ochraceous buff and black; tail, mixed black and ochraceous. Ex type British Museum.

Measurements. Total length, 1,460; tail, 610. Skull: total length, 200; occipito-nasal length, 157; intertemporal width, 56; Hensel, 148; zygomatic width, 112; palatal length, 95; breadth of braincase, 79; median length of nasals, 58; length of upper molar series, 50; length of mandible, 151; length of lower molar series, 66; length of upper canines, 38. Ex type British Museum.

This is a grayish brown baboon without any of the bright yellow hues seen on its allies. It is an animal with a substratum of a brownish color mixed with black, the latter more prominent on head and neck, overlaid with grayish white, the general effect being a dark brownish gray; all the upper parts and limbs are similar in coloration; the throat and chest being whitish gray and the abdomen a dark reddish brown, similar to the tail.

Papio porcarius (Brunnich).

Simia porcaria Brunn., Dyr. Hist. Univ. Nat. Theat., 1782, p. 13; Bodd., Naturf., XXII, 1787, p. 17, figs. 1, 2; Gmel., Syst. Nat., I, 1788, p. 30.

Simia sphingiola Herrm., Obs. Zool., I, 1804, p. 2, t. 1; Fisch., Syn. Mamm., 1829, p. 35.

Papio porcarius E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 102; Kuhl, Beitr., 1820, p. 19; Blainv., Ostéog., 1841, Atl., pl. IV; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 124; Forbes, Handb. Primates, I, 1894, p. 263; W. L. Sclater, Faun. S. Afr., Mamm., I, 1900, p. 13; Anders., Zool. Egypt., Mamm., 1902, p. 79; Thos. and Schwann, Proc. Zool. Soc. Lond., I, 1905, p. 255; I, 1906, p. 160; Pocock, Proc. Zool. Soc. Lond., II, pp. 558, 560; Elliot, Cat. Mamm. Field Columb. Mus., F. C. M. Pub., VIII, 1906, p. 566, Zool. Ser.

Papio comatus E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 102; Kuhl, Beitr. Zool., 1820, p. 19; Mivart, Proc. Zool. Soc. Lond., 1865, p. 561.

Cynocephalus porcarius F. Cuv., Hist. Nat. Mamm., Livr. VIII, 1819, pl.; 2nd ed., 1833, p. 132, pl. XLVII; Desm., Mamm., 1820, p. 69; I. Geoff., Cat. Primates, 1851, p. 35; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 130, 133; Mivart, Proc. Zool. Soc. Lond., 1865, p. 582; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 34.

Cynocephalus comatus E. Geoff., Cours Hist. Nat. Mamm., 1828, p. 28, 8me Leçon.

Hamadryas porcaria Less., Spec. Mamm., 1840, p. 108.

Cynocephalus ursinus Wagn., Schreb., Säugth. Suppl., I, 1840, p. 162, tab. VIII B; V, 1855, p. 65; Schinz, Syn. Mamm., I, 1844, p. 64.

Choiropithecus porcarius Reichenb., Vollständ. Naturg. Affen, 1862, p. 151, figs. 384-386.

THE CHACMA. *Tchalikamma,* Hottentots; *Imfena,* Swarzi, Zulu; *Tshweni,* Basuto.

Type locality. Africa.

Geogr. Distr. South Africa, south of the Limpopo River.

Genl. Char. Face and ears naked; nose extending beyond upper lip; hair long especially on shoulders, but not forming a mane; whiskers directed backward; tail black about half the length of body; callosities small. Skull with large orbital ridges; nasals long, rounded on upper sides; braincase, rounded, shorter than facial region; canines enormous; white rings encircling the eyes, and upper eyelids white.

Color. Male. General hue brownish black; hairs of crown and nape long, black with a broad band of yellowish; dorsal region black, hairs ringed with yellowish, but less distinctly so than on crown; flanks, arms above elbows and legs paler, nearly hair brown, hairs ringed with yellow; forepart of arms, hands, feet and tail black; under parts hair brown; white ring around eye, upper eyelids white; whiskers gray. Ex specimen in British Museum, S. Africa Zool. Soc. No. 5. 3. 11. 1.

Female. Upper parts mixed black and broccoli brown, hairs ringed with yellowish, dorsal region darker, blackish on central line, and then reddish brown to flanks, hairs always ringed with yellowish; upper parts of arms and legs grayish brown; hands, feet and tail black. The general color of the body is difficult to describe, as it is a general mixture of black, reddish brown, broccoli brown and grayish brown, with yellowish distributed throughout, and all the browns grading into each other, forming the dark head and dorsal region to the flanks, giving a general appearance of a grayish brown animal with a yellowish tinge, interspersed with black.

Measurements. Skull: total length, 213; occipito-nasal length, 173; Hensel, 157; zygomatic width, 130; intertemporal width, 59; palatal length, 190; breadth of braincase, 83; median length of nasals, 78; length of upper canines, 45; length of upper molar series, 57; length of mandible, 158; length of lower molar series, 76.

The skull of Brunnich's specimen is in the Berlin Museum, the type itself having been destroyed long since. In its measurements there is no important difference from those given above, except the zygomatic width which is considerably less. Mr. Grant, as quoted by Thomas and Schwann, (l. c.) says in Zululand this baboon is difficult to secure, and more often heard than seen, as they live in large troops in the thick forest. "They feed principally on fruit, and where wild fruit abounds they can sometimes be obtained by waiting under the trees, but they are at all times wonderfully wary." At Knyswa in Cape Colony, Mr. Grant found this species "in large troops both in the forest and on the Krantzes along the coast. It is exceedingly wary and can seldom be obtained; at times, however, they are very bold, and do considerable damage amongst mealies and fruits."

Mr. W. L. Sclater, (l. c.) gives the following account of this baboon furnished him by Mr. W. Cloete of Waterfall near Grahamstown, South Africa: "The Chacma is an inhabitant of the steep and rocky Krantzes which abound in all parts of Africa, and although most frequently found in treeless country, is a very good tree climber when opportunity offers; in some parts of its range where Krantzes are few it even sleeps in trees. It associates in troops of varying numbers, up to about one hundred individuals; when moving from place to place the old males are usually seen on the outskirts, and always form a rear guard; also when resting a sentinel or two is always placed on top of a rock in order to warn the troop of approaching danger.

"They rest at night in crevices of the Krantzes, coming out in the day only. They are frequently captured by surrounding their lairs before daylight, when all are asleep. The chief enemy of the baboon apart from man is the leopard, which, however, seems to confine his attention to females and young ones, as an adult old male would probably be a good match even for a leopard.

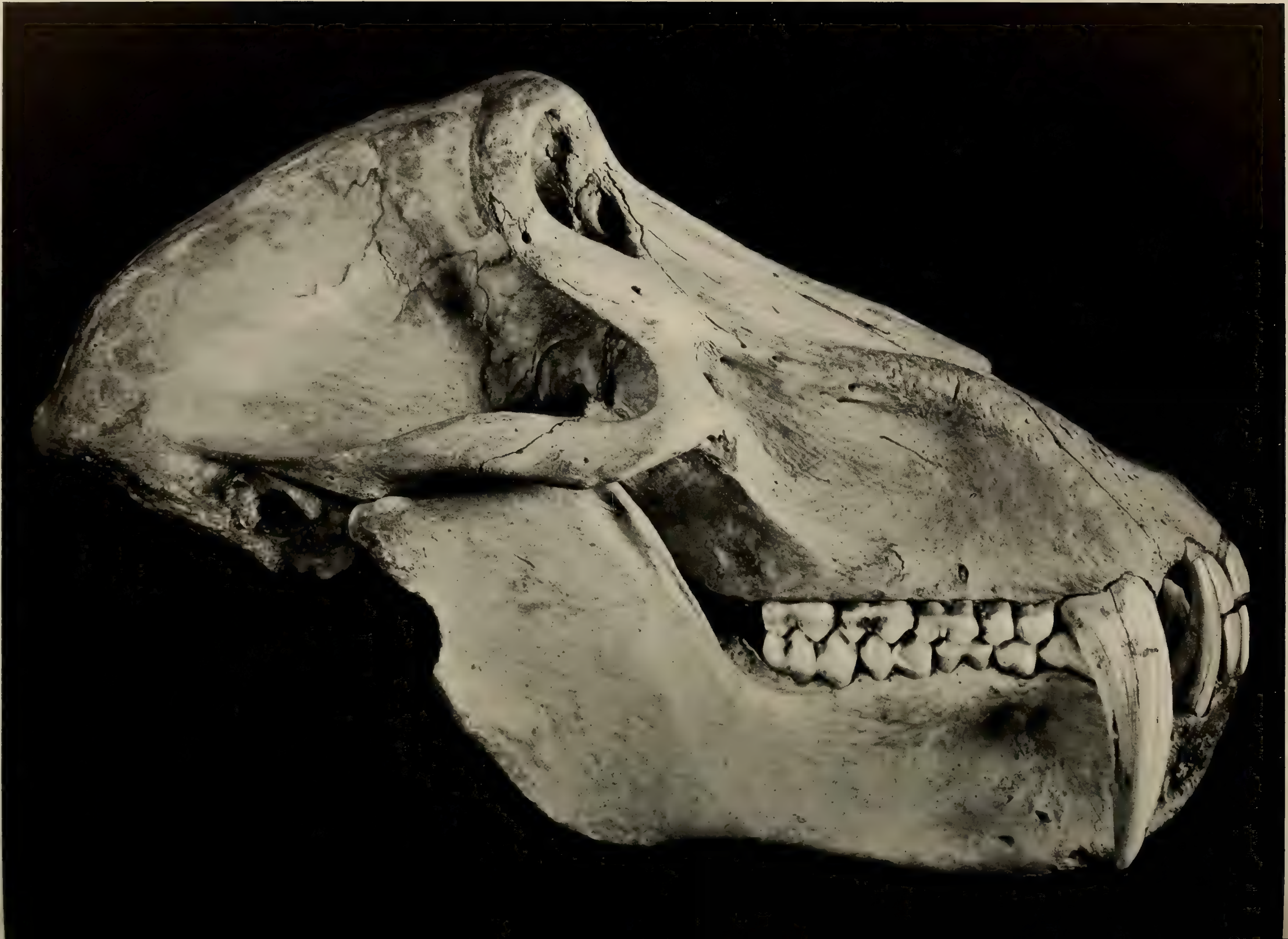
"The pace of a baboon is not very rapid; on level ground they can easily be overhauled by ordinary dogs, but in rough country and on hillsides they can hold their own with great ease. They move with the first part of the tail somewhat up-curved, and the last two-thirds hanging straight down.

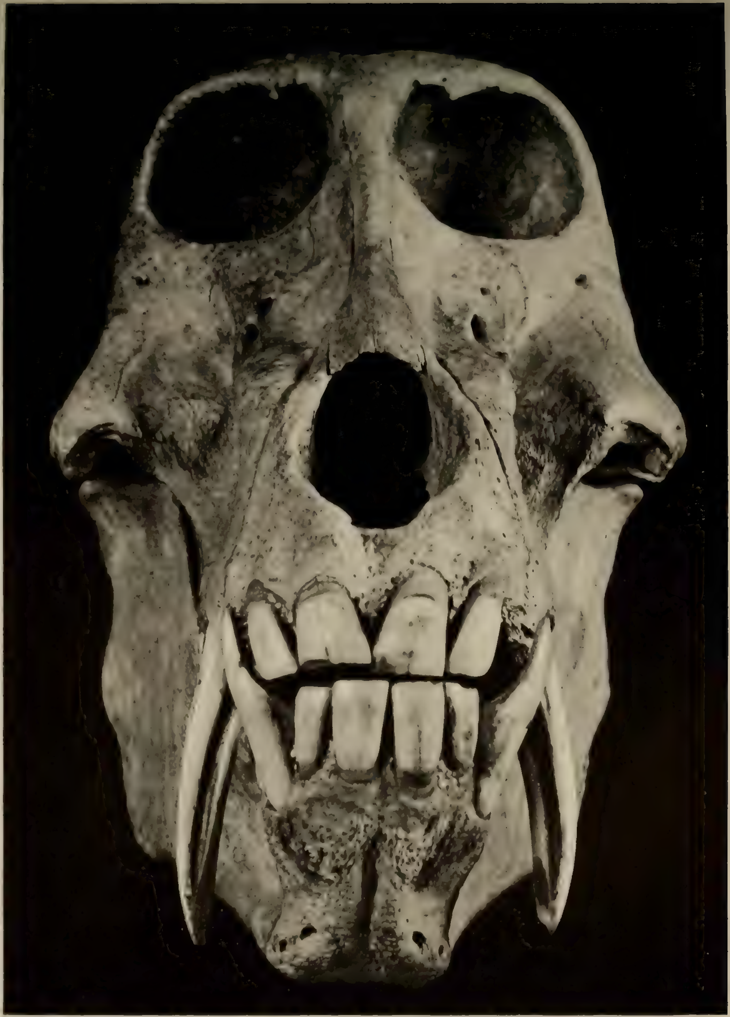
" The cry of this animal is a deep hoarse bark, and is compared by Prof. Moseley, who observed their habits in the neighborhood of Simons Town, to a German 'hoch' much prolonged.

"The baboon may be described as omnivorous; the fruit and leaves of the prickly pear, the more thorny ones being preferred, wild fruits, berries, and bulbs, and the white sweetish pith at the lower ends of the aloes form a great part of its diet. Insects, scorpions, centipedes and even lizards are eagerly sought after by turning over loose stones, and Mr. Distant relates how when first searching for insects in the Transvaal, he was intensely surprised to find stones turned over before his arrival, as if some other 'geodephagous coleopterist had anticipated him'; this he afterwards found was due to the insect-searching attributes of the baboons.

"Mr. Cloete informs me," says Mr. Sclater, "that wild honey is also a favorite article of diet, he has himself observed a male Chacma robbing a bee's nest in a hole in the ground; the method pursued by the animal was to rush at the nest, seize a comb, and after dropping it a few times and rolling it about to get the bees off, to carry it away a short distance so as to be able to devour it out of the way of the infuriated bees.

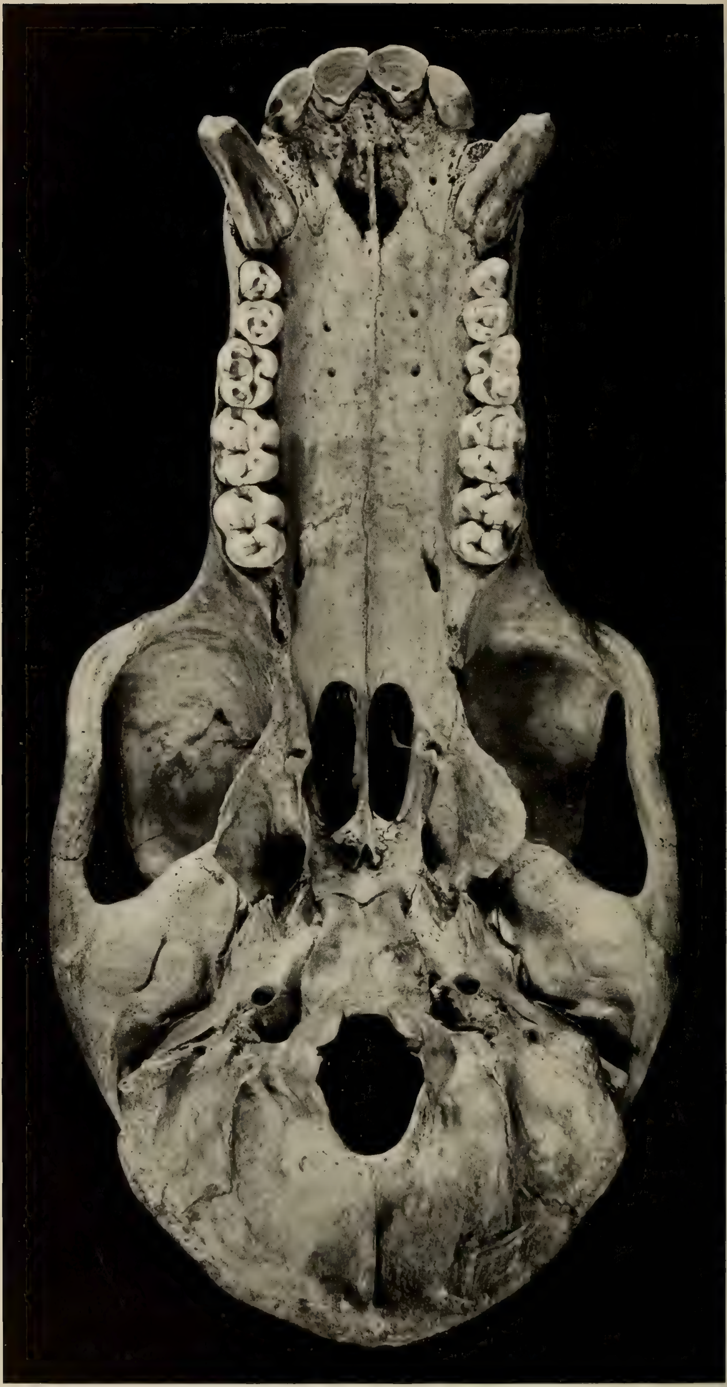
"The baboons cause great annoyance to the farmers; they frequently devastate orchards and fruit gardens, they suck and devour





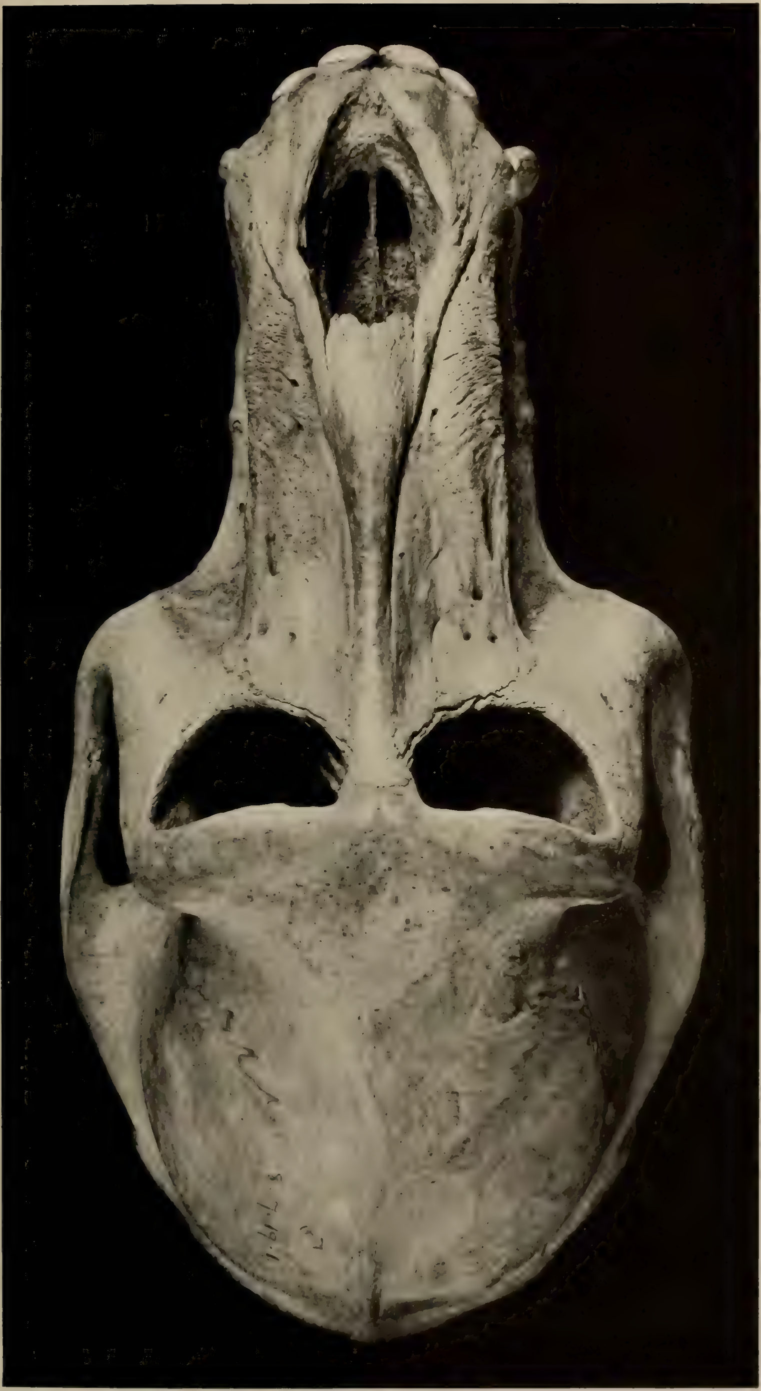
PAPIO CYNOCEPHALUS.

No. 8.7.19.1. Brit. Mus. Coll. ¾ Nat. Size.



Papio cynocephalus.

No. 8.7.19.1. Brit. Mus. Coll. ¾ Nat. Size.



Papio cynocephalus.

No. 8.7.19.1. Brit. Mus. Coll. ¾ Nat. Size.

ostrich eggs, and of late years they have taken to killing and disembowelling lambs and kids for the sake of the curdled milk in their stomachs.

"The Chacma," contines Mr. Sclater, "is frequently seen in captivity, and examples of it are nearly always to be found in the Zoological Gardens of London. When young it is a delightful pet, full of intelligence and affection, especially towards its master, though sometimes averse to strangers; with increasing age it becomes morose and dangerous. Baboons are frequently hunted by farmers with dogs and guns, the most ordinary procedure being to surround the 'kopje,' where they are known to be sleeping before daylight; they defend themselves from the attacks of dogs with considerable vigor, often inflicting very severe wounds with their long eye teeth, which, sometimes in the case of old males, reach a length of two inches."

Subgenus Papio.

Size large, colors pale, mane absent, tail not tufted.

Papio cynocephalus (Linnæus).

Simia cynocephalus Linn., Syst. Nat., I, 1766, p. 38; Gmel., Syst. Nat., I, 1788, p. 31.

Cercopithecus cynocephalus Erxl., Syst. Reg. Anim., 1777, p. 30.

Papio cynocephalus E. Geoff., Ann. Mus. Hist. Nat. Paris, IX, 1812, p. 102; Kuhl, Beitr. Zool., 1820, p. 18; Schleg., Mus. Hist. Nat. Pays-Bas, Simiæ, 1876, p. 127; Pocock, Proc. Zool. Soc. Lond., II, 1906, p. 560.

Cynocephalus babuin F. Cuv., Mém. Mus. Hist. Nat., Paris, IV, 1818, p. 419, pl. XIX; *Id.* Hist. Nat. Mamm., Livr. IV, 1819; 2nd ed., 1833, p. 122, pl. XIX; Desm., Mamm., 1820, p. 68; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 156; V, 1855, p. 63; I. Geoff., Archiv. Mus. Hist. Nat., Paris, II, 1843, p. 579, pl. XXXIV; *Id.* Cat. Primates, 1851, p. 34; Peters, Reis. Mossamb., 1852, p. 4; Dahlb., Stud. Zool. Fam. Reg. Anim. Nat., fasc. I, 1856, pp. 144, 149; Kirk, Proc. Zool. Soc. Lond., 1864, p. 649; Mivart, Proc. Zool. Soc. Lond., 1865, p. 558; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 35.

Simia cynocephala Fisch., Syn. Mamm., 1829, p. 33.

Cynocephalus thoth Ogilby, Proc. Zool. Soc. Lond., 1843, p. 11; Fras., Zool. Typica, 1848, pl. V; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 35; Schleg., Mus. Hist. Nat. Pays-Bas, Simiæ, 1876, p. 129, (in text).

Cercopithecus ochraceus Peters, Reis. Mossamb., Säugth., 1852, p. 2, pl. I, juv.; Sclat., Proc. Zool. Soc. Lond., 1893, p. 257, juv.

Cynomolgos cynocephalus Reichenb., Vollständ. Naturg. Affen, 1862, p. 133, figs. 332-339.

Cynocephalus langheldi Matschie, Sitzungsber. Gesch. Nat. Freund., Berlin, 1892, p. 233; Forbes, Handb. Primates, I, 1894, p. 275.

Papio babuin Reichenb., Vollständ. Naturg. Affen, 1862, p. 147, figs. 380, 381; Forbes, Handb. Primates, I, 1894, p. 265.

Papio lydekkeri Rothsch., Novitat. Zool., IX, 1902, p. 140. (desc. nulla). Blue Nile.

YELLOW BABOON.

Type locality. "L'Afrique Mediterranéene."

Geogr. Distr. Nubia, Central and East Africa in Sennaar, its southern limit not yet known.

Color. General hue varying from cream buff to buff yellow mixed with black, the latter in some specimens including more than half the apical portion of the hairs, and lying in streaks along the head and back; outer side of arms and legs cream buff grading to a darker hue; hands and feet ochraceous; inner side of limbs and under parts whitish or yellowish white; tail very long, mixed ochraceous and black. Callosities large, red, or purple red. Face flesh color. Hairs on nape and over shoulders very long.

Measurements. Size varying, some individuals as large as the great brown baboons; tail, 730. Skull: occipito-nasal length, 173; Hensel, 145.7; zygomatic width, 109.3; intertemporal width, 62; width of braincase, 87.3; palatal length, 91.5; median length of nasals, 84.7; length of upper molar series, 53; length of mandible, 115.5; length of lower molar series, 69.

This baboon varies greatly in size among individuals and some old males are as large as any belonging to the dark colored group, such as P. PORCARIUS, P. DOGUERA, etc. The individual from which the above description was taken, No. 8. 1. 1. 1. in the Collection of the British Museum from Tambararo, in Portuguese Southeast Africa, is a very large male, about the largest I have ever seen. The skin is folded over on itself so as to make it impossible to give proper measurements of the body, which indeed are never accurate when taken from a dried skin, but the great length of the tail, 730 mm. which is in accord with the size of the body, gives an idea of the animal's dimensions.

For a considerable period there has been much uncertainty regarding the animal Linnæus called *Simia* CYNOCEPHALUS. Like many of this Author's descriptions, the one given for this baboon is short and unsatisfactory, and the works which he cites in the brief synonymy give little or no assistance towards the recognition of the animal. Linnæus' description reads as follows: "S. caudata, imberbis flavescens, ore producto, cauda recta, natibus calvis." The only word in this brief diagnosis that gives any clue to the species is the word "flavescens," and by it we know it was a 'yellow or yellowish' baboon. The early authors render no help towards an elucidation of the problem, and E. Geoffroy gives but a few words to define his P. CYNOCEPHALUS, and the specimen he is supposed to have had is not now in the Paris Museum. It was not until F. Cuvier published his plate of *C. babuin* that Mammalogists generally were able to distinguish the 'yellow baboon' from its relatives in the genus. Some authors confounded it with P. SPHINX (nec Linn.), = P. PAPIO (Desm.), a reddish colored and somewhat smaller animal.

There is but one species of baboon known which can be termed yellow, and as Linnæus described his CYNOCEPHALUS as *flavescens,* it must have been the same as the one afterwards described as 'babuin,' 'thoth,' etc. The other species of Linnæus' time, afterwards placed in the genus PAPIO, viz.: SPHINX, *maimon* = S. SPHINX Linn., and HAMADRYAS, could never be termed *flavescens,* and therefore it seems perfectly safe to assume that the *Simia* CYNOCEPHALUS Linn., is the same as the yellow baboon which has been renamed by F. Cuvier, and other writers since Cuvier's time.

The type of *P. langheldi* is in the Berlin Museum and the following is a description taken from it.

Color. Hair of back long and coarse. General hue dull olive gray, hairs brown at base, then yellowish gray, then ringed with black and yellow, and tipped with black; the long coarse hair lighter; chin grayish white; legs externally brownish yellow; hands and feet olive yellow; under side of body and inner side of limbs silvery gray; tail reddish brown mixed with black.

Measurements. Total length, 1,470; tail, 570. Skull: total length, 192; occipito-nasal length, 190; zygomatic width, 110; interorbital width, 56; median length of nasals, 64; length of upper canines, 40; length of upper tooth row, 51; length of mandible, 149; length of lower tooth row, 66. Ex type Berlin Museum.

This is a yellowish baboon, the hairs with a somewhat greenish tinge on upper parts. It has long legs and a slender body, and I am inclined to consider it the same as P. CYNOCEPHALUS. As the type of this species has no locality, there is nothing to guide us as regards its patria, and the type of *langheldi* resembles closely the specimen of *P. thoth* in the British Museum. The skull has a very long facial region, being 111 mm. from the posterior end of nasals to the incisors, with a low braincase barely raised above the orbital ridges, and is 105 mm. in length, 76 mm. greatest breadth. There are slightly elevated ridges on sides of rostrum above narial aperture.

The type of *P. thoth* Ogilby, is in the British Museum, numbered 55. 12. 24. 8. Skull No. 1,100 a. The example is mounted and is of an olive brownish yellow, and may be described as follows:

Top of head, hind neck, upper parts and sides of body to thighs olive brownish yellow, the hairs having several cream colored rings and black tips; rump and legs a clearer yellow than the body; sides of head, throat and front of shoulders yellowish white or yellowish gray; outer side of arms, chest and under parts like the back; inner side of limbs yellowish, the hairs without annulations; hands and feet mixed yellow and black, the latter being mainly on the tips of the hairs. Hairs on upper back are very long, some reaching 300 mm., but they do not form a mane. The tail is yellow at base, remainder blackish brown, but it is difficult to determine whether this last is the natural color, or if it arises from the paucity of fur on the dark skin, or from the accumulation of dust deposited during the many years the specimen has been exhibited. Total length, 1,444; tail, 620; foot, 210. The animal when living must have been a long time in captivity, the skull showing this in its abnormal shape and its deteriorated condition.

The type of *C. babuin* F. Cuvier, is in the Paris Museum and resembles closely *P. thoth,* much more so indeed than it does any other specimen of the CYNOCEPHALUS type. Unfortunately neither example has any locality given for it, and whence these types originally came is quite unknown.

PAPIO NEUMANNI Matschie.

Papio neumanni Matschie, Sitzungsb. Ges. Naturf. Freund., Berlin, 1897, p. 161; Lydekk., Novit. Zool., 1902, p. 140; Anders., Zool. Egypt., Mamm., 1902, p. 46, pl. VIII, (type skull).

NEUMANN'S BABOON.

Type locality. Dongo Ngai, Masailand. Type in Berlin Museum.

Geogr. Distr. Masailand, range unknown.

Genl. Char. Size small; pits on sides of upper jaw very long; tail unicolor.

Color. General color of top of head and body ochraceous buff, the hairs being purplish gray with a subterminal ochraceous band and black tip. The purplish gray of the hairs gives a darkish hue to the pelage, but it is overlaid by the ochraceous bands, which makes it difficult to say which is the dominant color; sides of head and neck yellowish gray grading into whitish on the throat; arms ochraceous buff lighter than upper parts; legs like upper parts but hair without black tips; hands and feet blackish brown; under parts grayish brown on chest, abdomen like back; tail like back at base, remainder wood brown unicolor. Ex type, an immature specimen, Berlin Museum.

Measurements. Total length, 1,030; tail, 460. Skull of adult: total length, 179; Hensel, 125; intertemporal width, 55; zygomatic width, 111; length of nasals, 70; length of upper canines, 36; length of upper tooth row, 49; length of mandible, 134; length of lower tooth row, 63.

This is quite a small baboon, characterized by its unicolor tail.

PAPIO STREPITUS Elliot.

Papio strepitus Elliot, Ann. Mag. Nat. Hist., 7th Ser., II, 1907, p. 499.

Type locality. Fort Johnston, Nyassaland, S. E. Africa. Type in British Museum.

Genl. Char. Size large, exceeding the dimensions of P. PRUINOSUS; hair very long, loose; face partly naked; braincase about two thirds the length of facial region; nasals only slightly raised above rostrum, wide anteriorly; pit on side of upper jaw, long and deep; palate narrow, of nearly equal width for its entire length; tooth rows straight.

Color. Forehead mixed pale yellow and black; crown and nape dull tawny ochraceous, center of crown darker, the hairs ringed with dull tawny ochraceous and black, those on sides Prout's brown at base, remainder tawny ochraceous; the appearance of the crown and nape is more reddish than yellow, with a darker central portion; sides of head below ears buff; lower part of neck to middle of back purplish drab and ochraceous buff, the base of hairs purplish drab, the rest ringed with black and ochraceous buff, some of them tawny ochraceous, and tipped with black. The purplish drab of the base of hairs dominates the other colors and gives a kind of dark patch to this part of the back; on the shoulders is a patch of hairs buff at their roots, graduating to cream buff at the tips, not ringed; lower part of back paler than the upper, more yellow showing, and over all the upper parts are numerous long hairs with whitish tips; flanks, ochraceous buff; upper part of arms, thighs, legs and feet ochraceous buff; forearms and hands ochraceous buff and black, the latter having the base of hairs showing; under parts yellowish gray, tail at base like back mixed black and ochraceous, tip ochraceous buff; cheeks and sides of nose and lips covered with yellowish hairs; upper eyelids flesh color; space beneath eyes and nose black. Ex type British Museum.

Measurements. Head and body, 915; tail, 609. Skull: total length, 195; occipito-nasal length, 160; Hensel, 139; intertemporal width, 58; zygomatic width, 115; palatal length, 86; breadth of braincase, 79; median length of nasals, 72; anterior width of nasals, 14; length of upper molar series, 45; length of mandible, 115; length of lower molar series, 60. Ex type British Museum.

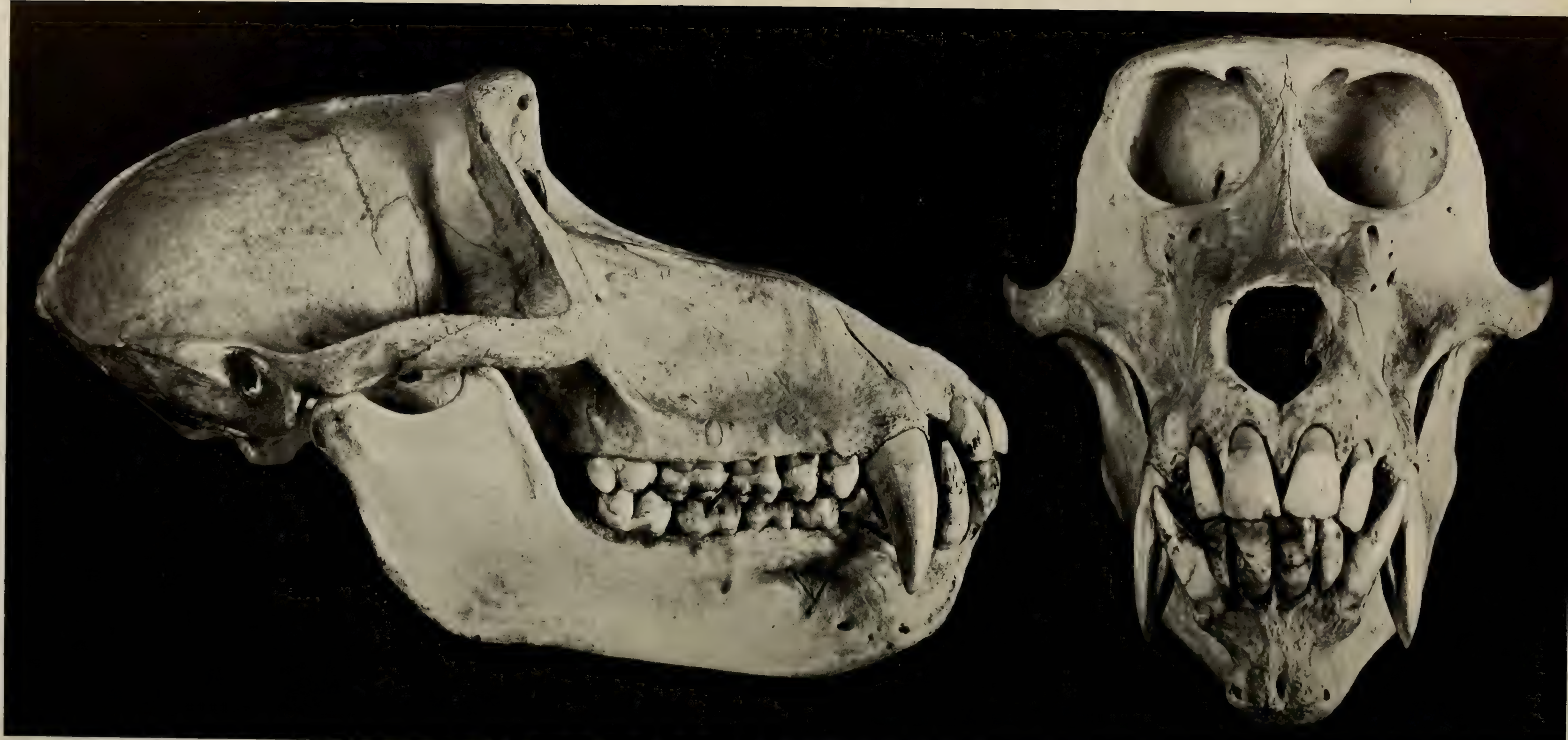
The general appearance of this species is that of a yellowish animal with a brownish back and a reddish head and limbs, and under parts whitish gray. This is the effect the various colors of the hairs produce when glanced at. In coloration it belongs to the light yellow-hued baboons. Looked at in some lights the hairs have a greenish yellow tint, but when carefully examined the colors are as in the description and unlike any of the other species. Two specimens were obtained by Sir Harry Johnston in Nyassaland, the type at Fort Johnston, and the other at Zomba, on Lake Nyassa. The species bears no resemblance whatever to P. PRUINOSUS procured at Lesumbwe, Nyassaland, either in color or in characters of the skull. The two examples are in the Collection of the British Museum.

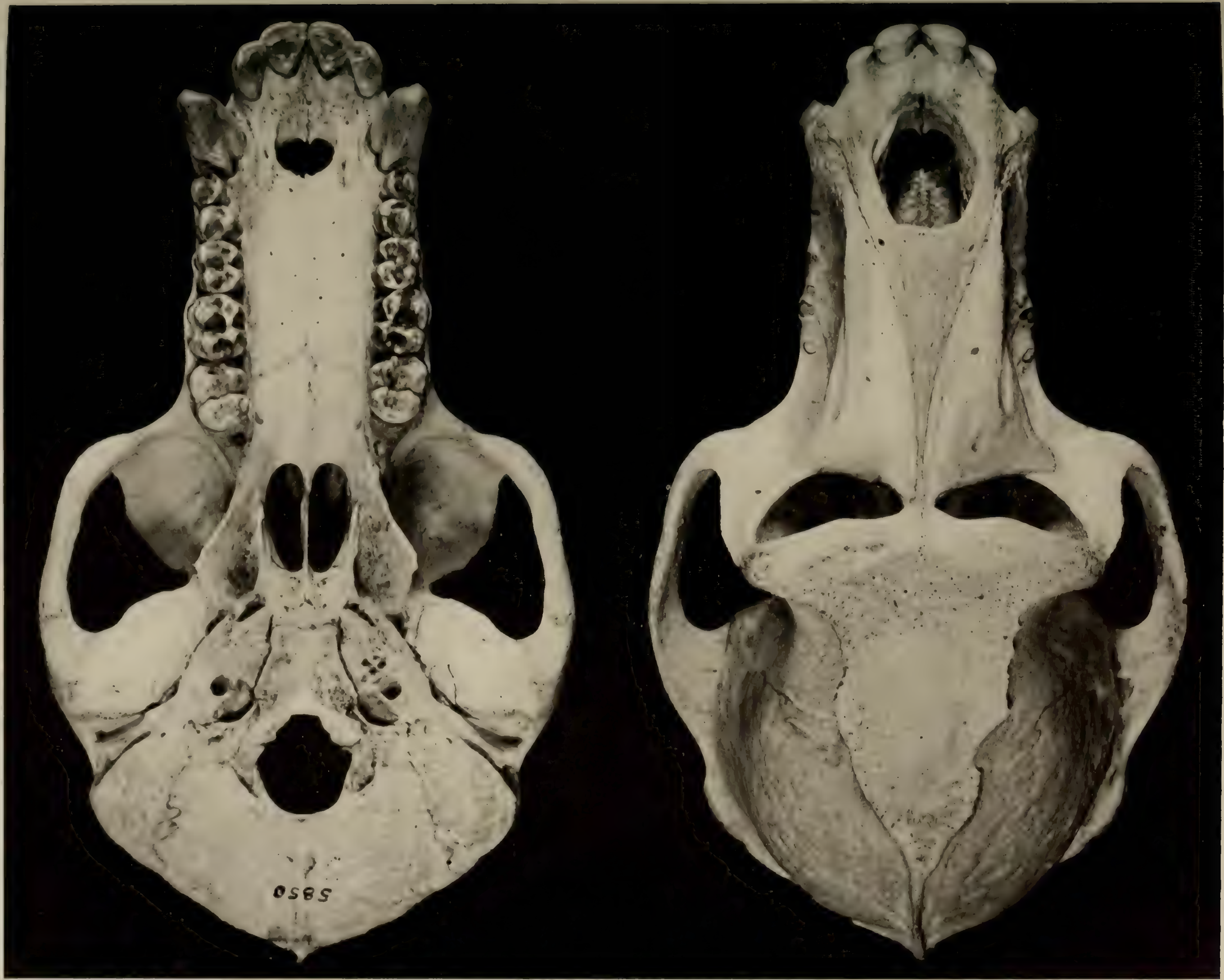
Sir Harry Johnston, referring probably to this species, states that it is very common everywhere in Nyassaland, and very bold and cunning. It is constantly robbing the plantations of the natives, and the women profess to go in terror of the large males, as they say the latter would attempt to outrage them if they see no man accompanying the party. When the baboons descend to raid the plantations, one or more of their number invariably stand sentry to warn the rest of the troop of approaching danger.

PAPIO PRUINOSUS Thomas.

Papio pruinosus Thos., Proc. Zool. Soc. Lond., 1896, p. 789, pl. XXXVIII; 1897, p. 927; Anders., Zool. Egypt., Mamm., 1902, p. 79, pl. XIV.

Type locality. Lesumbwe, Monkey Bay, Livingstone Peninsula, Lake Nyassa. Type in British Museum.





Papio hamadryas.

No. 5850 Amer. Mus. Nat. Hist. Coll. ¾ Nat. Size.

Geogr. Distr. Nyassaland.

Genl. Char. Color hoary; belly white; fur not annulated. Skull resembling that of *P. thoth* (type), but with a shorter muzzle and more tapering. Tooth rows bowed, pterygoid fossa broader. Hair long, loose and rather coarse.

Color. Hoary gray and black, the hairs having black or brownish black bases, remainder white. The coat consists of long and short hairs, the former being all white to the roots, the shorter having black bases. Hairs on crown long, almost forming a crest, basal part white, apical half black nearly producing the effect of a black crown; outer side of arms black or brownish black, base of hairs white; inner side of arms, entire under parts, and legs, grayish white; hairs on hands and feet very long, almost covering the fingers and toes to the nails; hands blackish; feet seal brown on center, rest grayish white; tail, black for two thirds the length, grading gradually into the grayish white of the tip. Ears apparently flesh color; face grayish white; around eyes and mouth flesh color. Ex type British Museum.

Measurements. Skin. Total length, 1,300; tail, 550; hind foot, 190. Skull: total length, 183; occipito-nasal length, 150; Hensel, 128; zygomatic width, 103; intertemporal width, 56; palatal length, 80; breadth of braincase, 80; median length of nasals, 61; length of upper molar series, 49; length of mandible, 132; length of lower molar series, 60; length of upper canines, 34. Ex type British Museum.

This Baboon, only represented by the unique type, is different in its coloration from all the other members of the genus, and resembles in that respect the American Opossum, having the same long and short hairs similarly colored.

Subgenus Hamadryas.

Shoulders and back covered by a long, loose, heavy mane; tail tufted, ears naked.

PAPIO HAMADRYAS (Linnæus).

Simia hamadryas Linn., Syst. Nat., I, 1758, p. 27; I, 1766, p. 36; Bodd., Elench. Anim., 1784, p. 57; Gmel., Syst. Nat., I, 1788, p. 30.

Simia cynomolgos Linn., Syst. Nat., I, 1758, p. 28.

Cercopithecus hamadryas Erxl., Syst. Reg. Anim., 1777, p. 22; Kerr, Anim. Kingd., 1792, p. 63.

Cercopithecus hamadryas ursinus Kerr, Anim. Kingd., 1792, p. 63.

Papio hamadryas E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 103; Kuhl, Beitr. Zool., 1820, p. 20; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 129; Forbes, Handb. Primates, I, 1894, p. 272; Anders., Zool. Egypt., Mamm., 1902, p. 28, pls. I-III; Elliot, Cat. Mamm. Field Columb. Mus. Pub., VIII, 1906, p. 565, Zool. Ser.; Pocock, Proc. Zool. Soc. Lond., II, 1906, p. 558.

Cynocephalus hamadryas F. Cuv., Hist. Nat. Mamm., Livr. V, 1819, pl.; 2me ed., 1833, p. 129, pl. XLVI, ♂; Desm., Mamm., 1820, p. 69; E. Geoff., Cours Hist. Nat. Mamm., 1828, 8me Leçon; Rüpp., Neu Wirbelt, Faun. Abyss., 1835-40, p. 7; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 153; V, 1855, p. 82; I. Geoff., Cat. Primates, 1851, p. 33; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 131, 135; Reichenb., Vollständ. Naturg. Affen, 1862, p. 152, figs. 387-395; Blanf., Geol. and Zool. Abyss., 1876, p. 222; *Id.* Proc. Zool. Soc. Lond., 1887, p. 622; Thos., Proc. Zool. Soc. Lond., 1911, p. 127.

Cynocephalus wagleri Agass., Isis, 1828, p. 86.

Hamadryas chœropithecus Less., Spec. Mamm., 1840, p. 107.

Hamadryas ægyptiaca Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 34.

Papio cynomolgos Thos., Proc. Zool. Soc. Lond., 1911, p. 128.

HAMADRYAS BABOON.

Type locality. Africa.

Geogr. Distr. Abyssinia.

Genl. Char. Size large; muzzle long, nostrils terminal; face naked; eyes set in beneath overhanging brows; ears naked; shoulders and back to the middle covered by a mane; whiskers long, growing backward partly covering the ears; buttocks nude, callosities large; tail tufted, carried arch like for basal third or more, remainder hanging perpendicularly; under parts and inner side of limbs sparsely haired.

Color. Face flesh color; rostral region, ears and surface of hands and feet brownish; mane, and upper parts generally dark reddish brown, hairs ringed with yellowish white; rump pale brown; space surrounding callosities and thighs cream color; lower parts of legs mixed brown and buff, the hairs ringed alternately with those colors; fore arms and hands grayish black, hairs ringed with gray and black; feet reddish brown; inner sides of arms above elbows, and inner side of legs buff; chest brownish gray; abdomen burnt umber; tail Prout's brown and gray, tuft Prout's brown; whiskers grayish white at base grading into brown. Ex specimen in British Museum, procured by Rüppell in Abyssinia in 1836.

The usual coloring of this baboon is much lighter than the example described above, and is an ashy gray on mane, and upper parts washed with greenish, the hairs ringed with black and greenish gray; fore arms and legs grayish black; under side of body grayish white.

Rüppell's specimen is an adult male, and darker in color than is generally seen among individuals of this species.

Measurements. Skull: total length, 192; occipito-nasal length, 156; Hensel, 133; zygomatic width, 113; intertemporal width, 52; palatal length, 84; breadth of braincase, 82; median length of nasals, 68; length of upper molar series, 50; length of upper canines, 32; length of mandible, 139; length of lower molar series, 65.

Both sexes of this species have large air sacs or pouches in the neck, which reach down nearly to the arm pits. An opening above the larynx connects these with the windpipe.

Blanford in his Observations on the Geology and Zoology of Abyssinia (l. c.) gives the following account of this baboon: "The great Dog-faced Baboon, the Sacred Ape (Thoth) of the ancient Egyptians, is by far the commonest Monkey throughout the portion of Abyssinia traversed by me. It was met with everywhere from the plains around Annesley Bay to the top of the Delanta plateau, although most abundant, perhaps, in the tropical and subtropical portions of the country. I saw a small herd close to Theodore's old camp at Baba, on the Delanta plateau at above 9,000 feet of elevation. In the passes leading to the tableland from the coast immense numbers were constantly seen, and the animals evidently keep to the sides of rocky ravines.

"The herds vary in number; some cannot include much less than 250 to 300 monkeys of all ages. The old males are always most conspicuous animals, all the forepart of the body being covered with long hair. They usually take the lead when the troop is moving; some of them also bringing up the rear; others placing themselves on high rocks or bushes, and keeping a sharp look-out after enemies. A troop collected on a rocky crag presents a most singular appearance. I several times saw large numbers assembled around springs in the evening in the thirsty Shoho country between Komayli and Sanafe. On such occasions every jutting rock, every little stone more prominent than the rest, was occupied by a patriarch of the herd who sat, with the gravity and watchfulness befitting his grizzled hair, waiting patiently until the last of his human rivals had slaked his thirst and that of his cattle. Around, the females were mainly occupied in taking care of the young, the smaller monkeys amusing themselves by gambolling about; occasionally, if a young monkey became too noisy or interfered with the repose of one of his seniors, he 'caught it' in the most unmistakable style and was dismissed with many cuffs, a wiser if not a better Monkey.

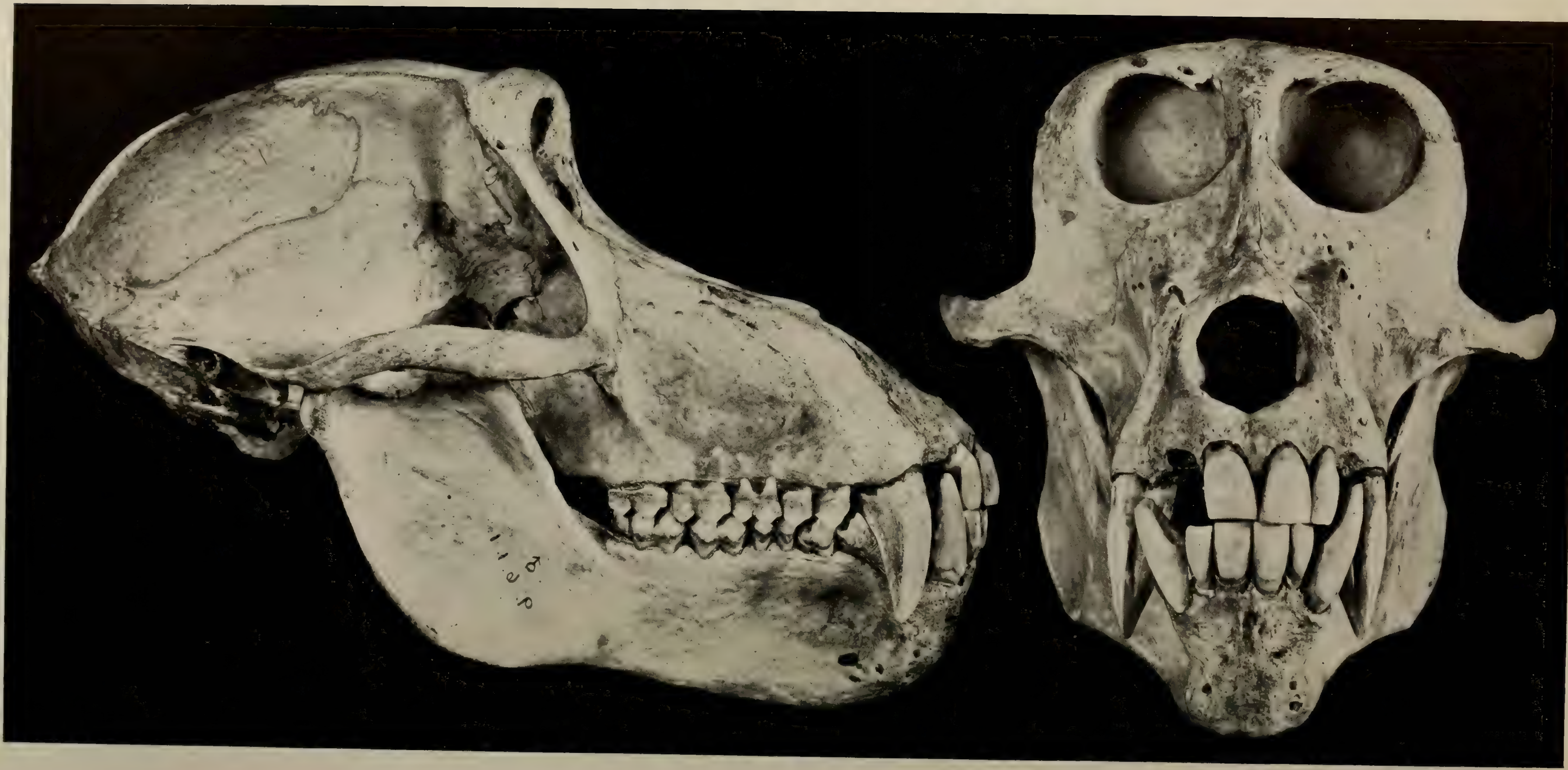
"*Cynocephalus hamadryas* feeds on small fruits, berries, and seeds, and often on buds of trees, and on young shoots. On the highlands I frequently saw troops of them in the fields, engaged in searching for the 'quentee' the small tubers of *Cyperus esculentus,* which appeared also to be a great resource of the half starved people in Tigre.

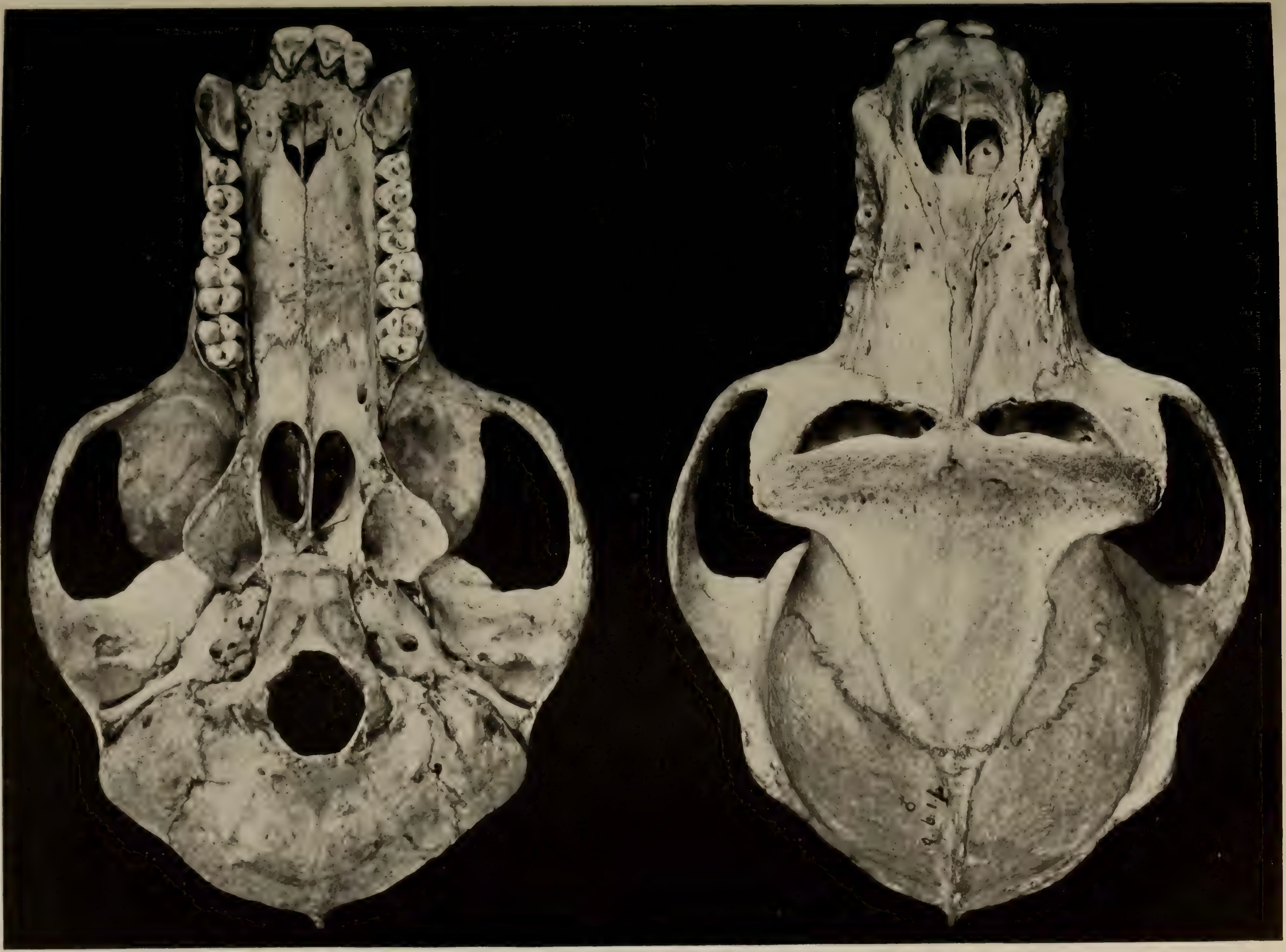
"This species is rarely ever seen on trees. It appears to avoid woods, and to keep mainly in the open country, preferring, as already mentioned, rocky precipices. Hence its habits differ entirely from those of all the Indian Monkeys which are tree loving animals, and indeed from Monkeys in general. It climbs heavily and clumsily for a Monkey, and when moving quickly on the ground had a steady regular gallop instead of the bounding movements of a *Presbytes* (PYGATHRIX).

"Doubtless the association in such very large herds is in a great measure adopted as a means of defence against its enemies. From their size and great power of jaw the old males are most formidable antagonists, and their boldness in resenting injury is said to be in proportion to their power. Brehm ('Reise nach Habesch,' p. 88) relates an instance of their attacking a Leopard which had carried off one of the herd, and many stories are current in Abyssinia of their attacking men. Mr. Munzinger told me that once he, with one or two companions, were surrounded by a large herd, which barred their path, and were so threatening that he was obliged to shoot one in self-defence. Even then, although they fell back a little, the Monkeys did not run away.

"I cannot help thinking, however, that these Monkeys rarely attack men, as otherwise some instances would have happened in the expeditionary force and I never heard of any. Near the passes the flocks of *Cynocephalus* soon became wary, as they were frequently fired at. Young animals when captured, quickly became tame and docile, but not so much so as *Cercopithecus.*"

The *Simia cynomolgos* Linn., founded upon Hasselquist's *Simia ægyptiaca* is doubtless this species, and the name therefore becomes a synonym.





PAPIO BROCKMANI.

No. 9.6.1.1. Brit. Mus. Coll. ¾ Nat. Size.

Papio hamadryas arabicus Thomas.

Papio arabicus Thos., Proc. Zool. Soc. Lond., 1899, p. 929; 1900, p. 96.

ARABIAN HAMADRYAS BABOON.

Type locality. Sixty miles north west of Aden, Arabia. Type in British Museum.

Geogr. Distr. Arabia. Range unknown.

Genl. Char. Similar to P. hamadryas but smaller in size. Type in British Museum.

Color. The type is a young female, without any mane and gives very little idea of the adult animal. The following description is therefore taken from an adult male captured at Lakej, near Aden, and now in the British Museum Collection: Face bare. Top of head, starting in a narrow line from the forehead and spreading out towards the back of the head, blackish brown, hairs tipped with yellowish white, rest of head and mane, which covers practically the whole of the upper parts light grayish brown, the hairs being light brown ringed with grayish white; arms above elbows, legs and back, pale brownish gray, the hairs ringed similarly to those of the mane; forearms and hands iron gray, nearly black; feet pale brown and gray; rump darker brown than the mane; under parts pale gray, becoming pale brown at the loins. Another specimen has the mane and upper parts a uniform reddish brown, generally darker throughout than the one described.

Measurements. Skull: total length, 153; occipito-nasal length, 131; Hensel, 140; zygomatic width, 98; intertemporal width, 48; palatal length, 66; breadth of braincase, 72; median length of nasals, 50; length of upper molar series, 46; length of mandible, 112; length of lower molar series, 56. Ex type in British Museum.

In general appearance this baboon resembles the P. hamadryas of the African continent, but is considerably smaller.

Papio brockmani Elliot.

Papio brockmani Elliot, Ann. Mag. Nat. Hist., IV, 1909, 8th Ser., p. 248.

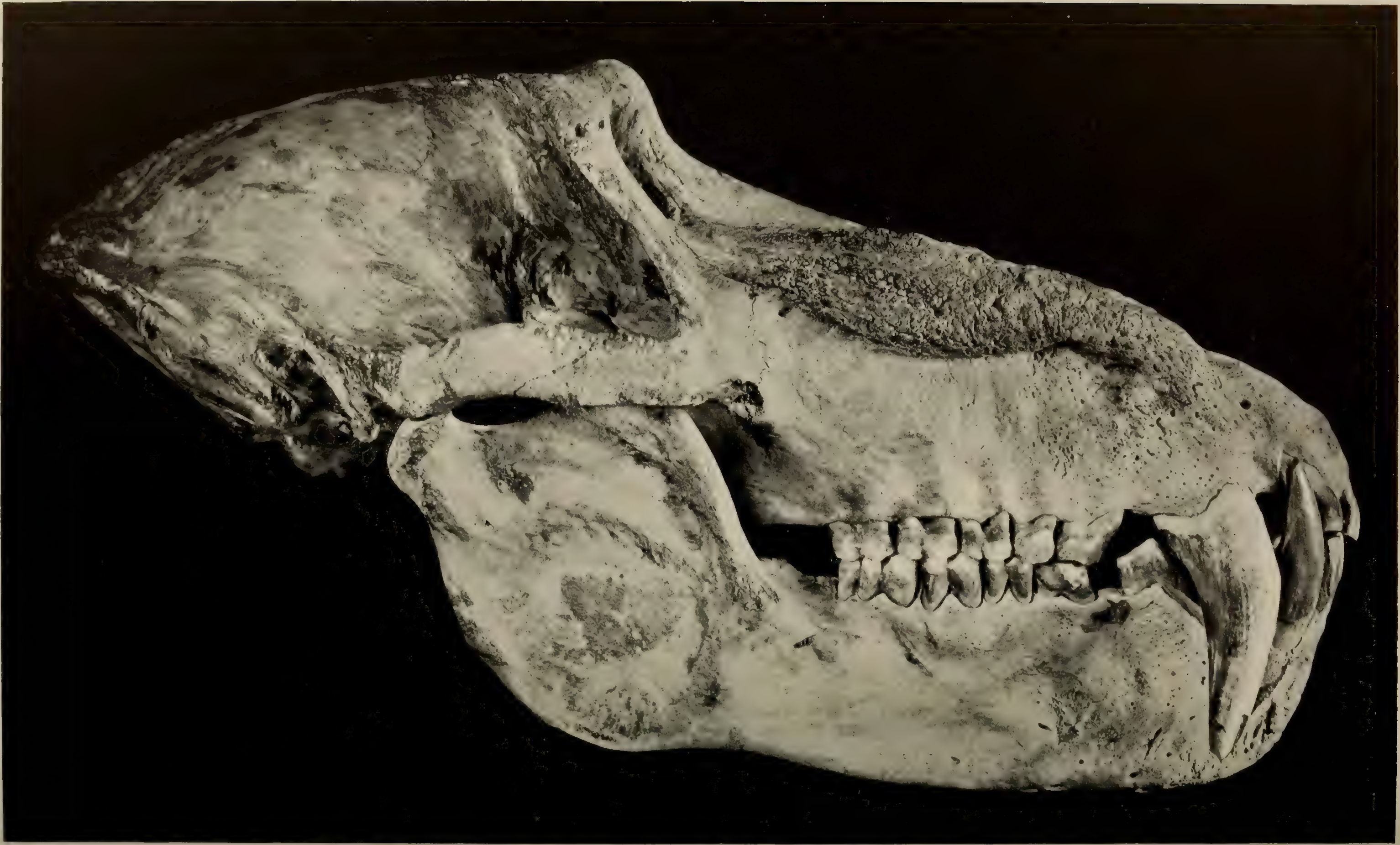
Type locality. Derra Dawa, Somaliland. Altitude 3,500 feet. Type in British Museum.

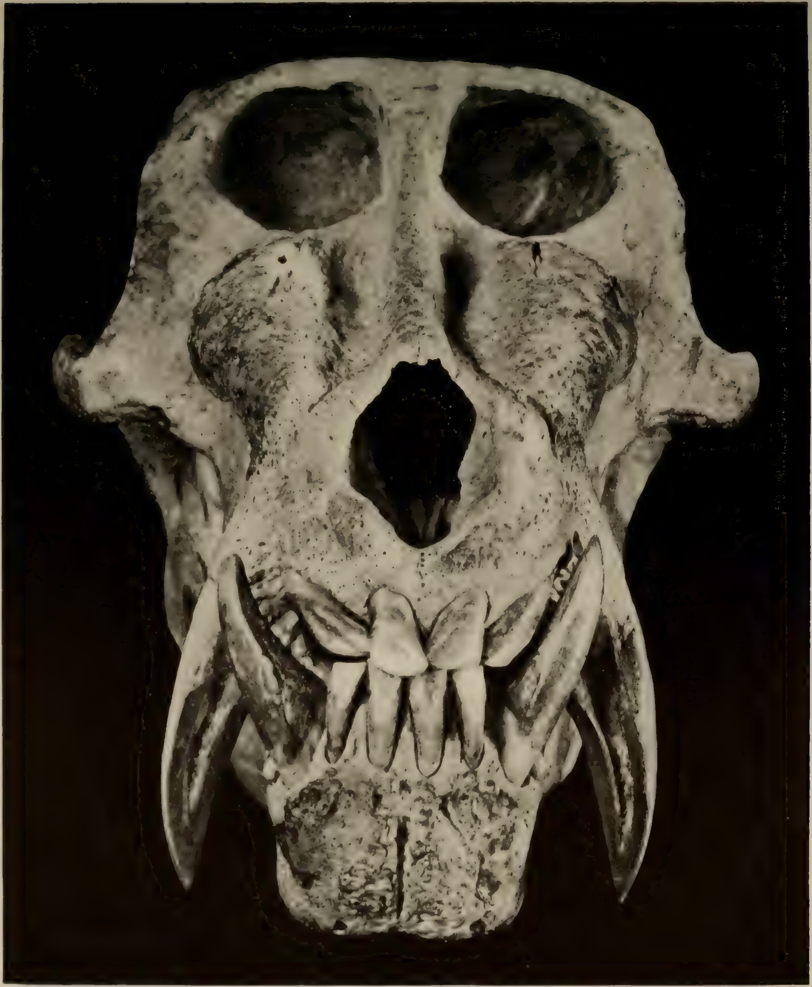
Genl. Char. Color very different from P. hamadryas inclined to reddish, no gray on mane. Skull compared with one of P. hamadryas obtained by Rüppell, has a shorter facial region; rounded zygomatic arches, not squared as in the other; straight tooth rows, not curved, and smaller teeth. Outer edge of lachrymal, from orbital ridge to root of zygoma, straight, not flaring outward at bottom as in the skull of allied species; rostrum broader posteriorly; palate of equal width throughout its length; orbital ridge straight, not depressed in center; septum narrower, orbits more round.

Color. Adult Male. Face flesh color; callosities red; forehead covered with black hairs banded with white, this color rising to the crown in the shape of a pyramid coming to a point on crown of the head; hairs on cheeks and sides of head long, stiff, very dense, rising upwards in enormous tufts above head, yellowish white at base grading into buffy at tips; hind neck and mantle pale reddish brown, hairs with a band of white succeeded by a subterminal one of black and tip silvery white; towards the lower back the color darkens into a cinnamon banded with lighter cinnamon, and tipped with the same; upper part of rump ochraceous buff paler than the mantle; lower rump and base of tail silvery white; sides of jaw with hairs long and dense, yellowish white; throat more sparsely covered with hairs of the same color; chest dark gray, hairs banded with black, and white tips; abdomen ochraceous, arms and hands like forehead, grizzled, hairs banded with black and white; tail grizzled russet and white, tuft russet. Ex type British Museum.

Measurements. Total length, 1,322; tail, 572; foot, 188; ear, 59, (Collector). Skull: total length, 180.4; occipito-nasal length, 147.9; Hensel, 125.7; intertemporal width, 56.6; width of braincase, 80; length of rostrum, 91.2; width of rostrum posteriorly, 46.6; zygomatic width, 119.7; palatal length, 76.8; median length of nasals, 52.1; length of upper molar series, 44.6; size of last upper molar crown, 10 x 8.5; length of mandible, 136.1; length of lower molar series, 57; size of last lower molar crown, 13.5 x 8.5. Ex type British Museum.

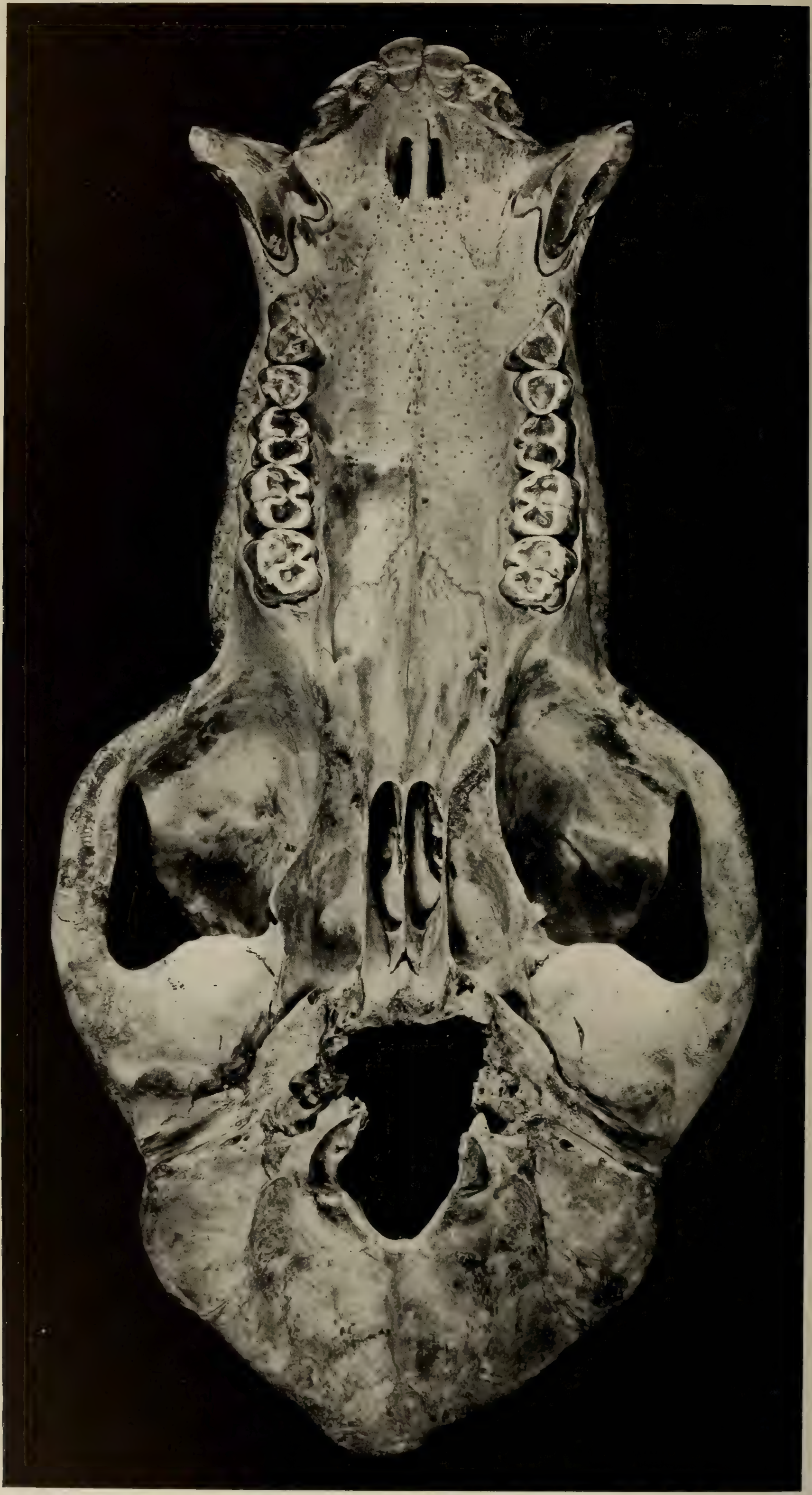
The type is a very fine specimen of an adult male. As shown by the description it differs in every way from the Abyssinian Hamadryas and also from the Arabian, as the affinities of the latter seem to be altogether with the Abyssinian animal and not with the present species. The light reddish mantle, and parti-colored rump of ochraceous buff and silvery white, cause it to be very conspicuous when placed among examples of the Hamadryas baboon. The type was procured by Mr. D. Drake-Brockman after whom I had much pleasure in naming it. I saw this apparently same species frequently in Durban, Somaliland, and it was the only species of baboon inhabiting the country until the valley of the Shebeyleh is reached. It lives among the rocks, and it is seldom that an individual is found far from some rocky ledge to





PAPIO SPHINX.

No. 5.5.23.10. Brit. Mus. Coll. ¾ Nat. Size.



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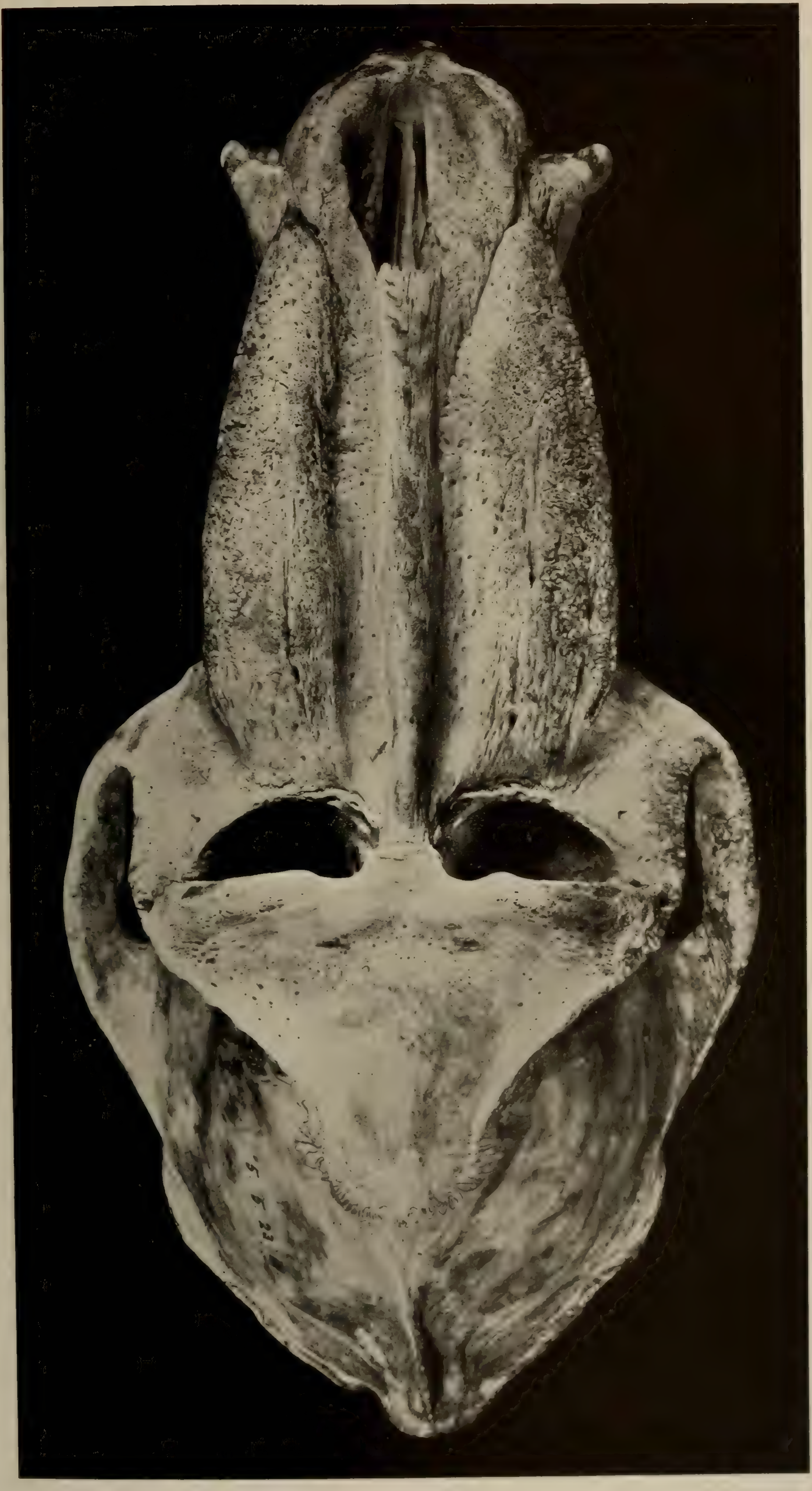

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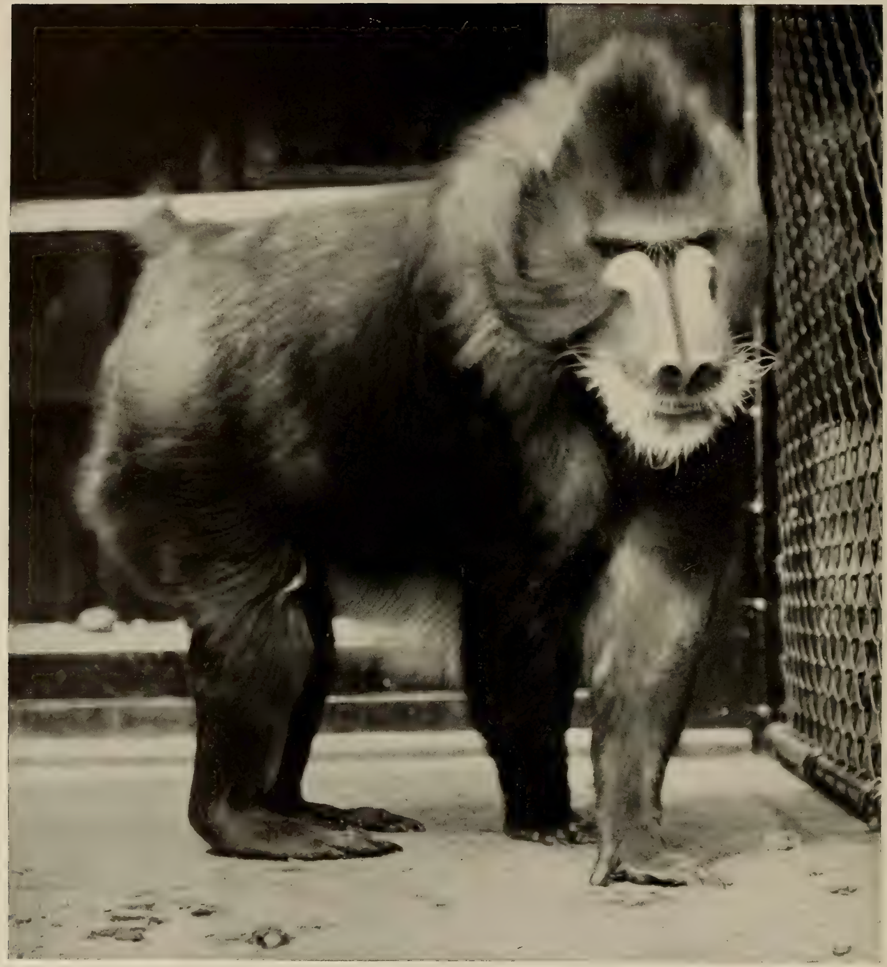


Papio sphinx.

which they quickly flee on the slightest appearance of danger. They run on all-fours with considerable speed and get over the roughest places and overcome intervening obstacles with wonderful dexterity.

When a troop is discovered the members salute the intruder with loud, hoarse barks, and the entire party are apparently thrown into a state of great excitement. Some old male will seat himself upon a high vantage point so as to overlook all below him, while expressing his disapproval of the presence in his dominions of the foreigner, not of his class, by angry barks and grunts. At the same time he keeps a sharp eye upon the intruder's movements and issues his orders to the rest of the band, as to the imminence of danger, and the proper methods for them to adopt in order to escape it. When it is evident that it is the stranger's intention to cultivate a close acquaintance with the rock-dwellers, the order for flight is given, and the band cease their offensive remarks and scamper away over the rocky heights, those of them too young to keep up with the rest, clinging to the mother's body with arms and legs. The sentinel delays a moment after the rest have started, and then, ejaculating one more swear-word, takes up the line of flight making the best time he can, but stopping occasionally to anathematize his pursuers. When one has made a slight mistake in his calculations as to the distance a rifle bullet might be disagreeable and gets hit, although his interest in all subsequent proceedings may have vanished, the excitement of the rest is greatly increased, and, with much threatening by voice and action, they advance towards the body of their fallen companion, as if to dispute possession with the slayer. No doubt these powerful animals with their great teeth and body strength would be very formidable antagonists even to an armed man if they attacked him in any numbers, but generally I believe their actions do not pass beyond the threatening stage, their natural solicitude for their own safety and that of their families, inducing them to think better of aggressive warfare, and to attend strictly to the preservation of their own skins. It is a fine large species, and the long manes that cover their shoulders and backs, especially of the old males which are very thick and heavy, give them rather a majestic appearance.

Subgenus Mormon.

Bony ridges on rostrum; face highly colored.

PAPIO SPHINX (Linnæus).

Simia sphinx Linn., Syst. Nat., I, 1758, p. 25; I, 1766, p. 35, (nec Auct.); Thos., Proc. Zool. Soc. Lond., 1911, p. 126.

Simia maimon Linn., Syst. Nat., I, 1766, p. 35, juv.; Bodd., Elench. Anim., 1784, p. 56; Gmel., Syst. Nat., I, 1788, p. 29; Fisch., Syst. Mamm., 1829, p. 36.

Simia mormon Alstr., Acta Naem., 1766, p. 144, pl. III; Gmel., Syst. Nat., I, 1788, p. 29.

Papio maimon Erxl., Syst. Reg. Anim., 1777, p. 17; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 130; Forbes, Handb. Primates, I, 1894, p. 258; Elliot, Cat. Mamm. Field Columb. Mus., F. C. M. Pub., VIII, 1906, p. 563, fig. CXXXVI, Zool. Ser.

Papio mormon Erxl., Syst. Reg. Anim., 1777, p. 18; E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 104; Kuhl, Beitr. Zool., 1820, p. 20; Pousarg., Ann. Scien. Nat. Paris, III, 7me Sér., 1896, p. 240.

Simia suilla Kerr, Anim. Kingd., 1792, p. 59.

Cynocephalus mormon F. Cuv., Hist. Nat. Mamm., Livr. IV, 1807, pl.; 2nd ed., 1833, pp. 143, 146, pls. LII, LIII; Desm., Mamm., 1820, p. 70; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 164, tab. LII, LIII; V, 1855, p. 65; I. Geoff., Cat. Primates, 1851, p. 35; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 131, 132, tab. VI, figs. 14, 16, 18, 20.

Mormon maimon Less., Spec. Mamm., 1840, p. 111; Reichenb., Vollständ. Naturg. Affen, 1862, p. 158, figs. 398-400; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 36.

Papio sphinx Elliot, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 417.

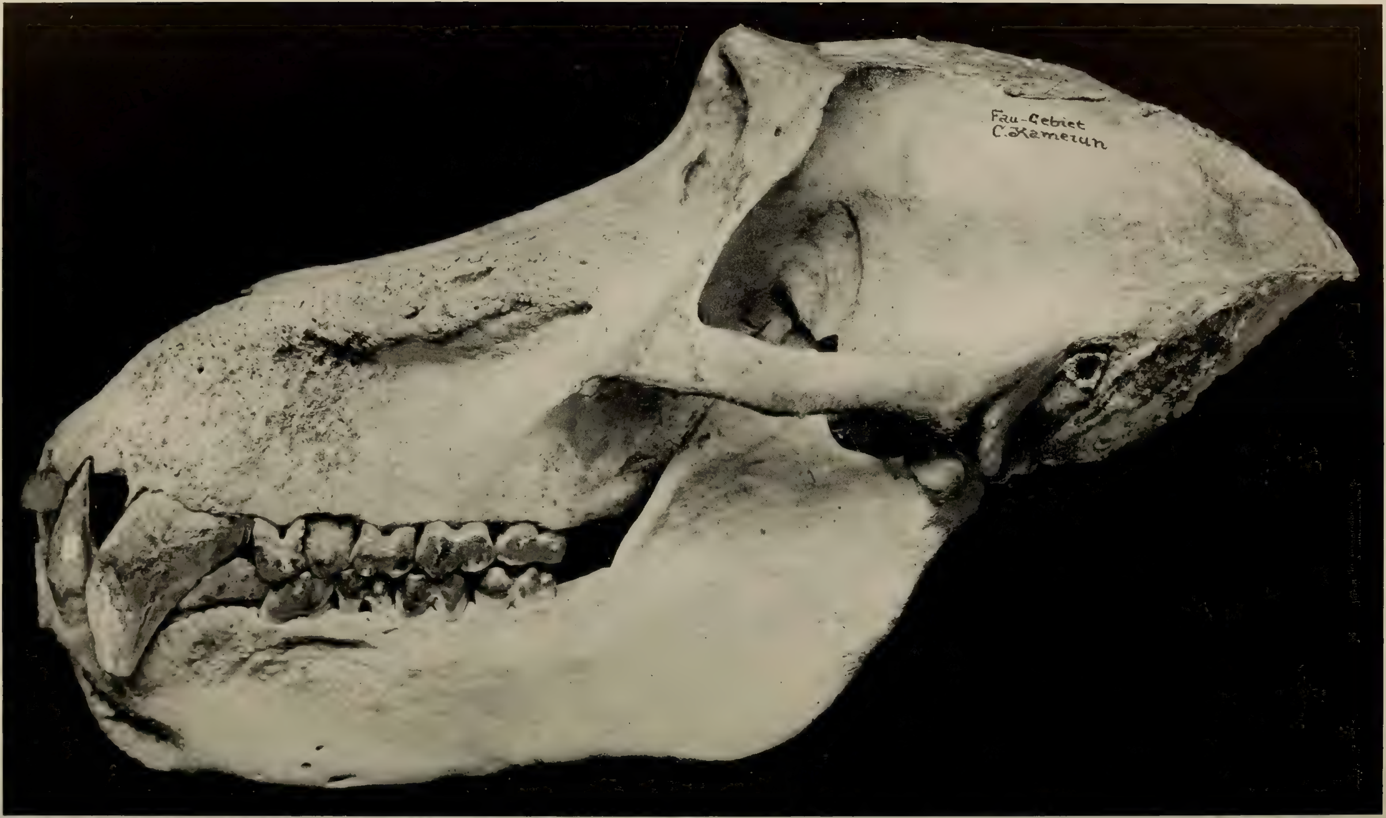
MANDRILL.

Type locality. "Ceylon."

Geogr. Distr. Senegambia to the Congo, West Africa.

Genl. Char. Head very large, out of proportion to the body; rostrum long, with longitudinal swellings on each side of nasals; under jaw heavy; eyes deep set, brows overhanging; ears pointed; tail very short; limbs short, powerful. Skull massive, braincase small, frontals flat; mandible deep and powerful; teeth large, canines enormous.

Color. Top of nose red, tip scarlet, ridges blue; spot on forehead black; patch above ear and extending around neck, yellowish white; the hairs on upper part of body, legs and feet, ringed with ochraceous and black, the black predominating on shoulders, arms, and back of neck where it forms a band below the yellowish white on neck; dorsal line black; forehead, and at side of black patch, buff and black, buff predominating; hands black; under parts yellowish white; flanks and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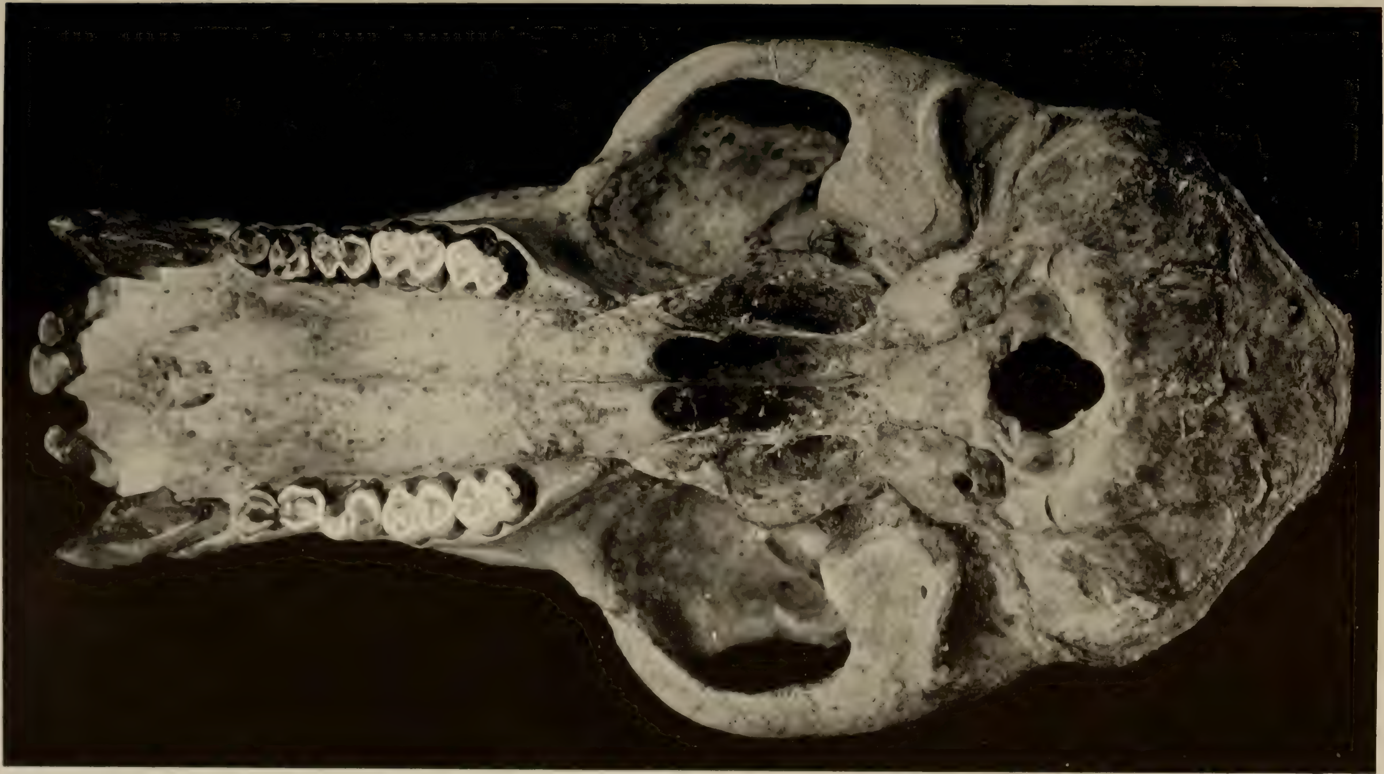
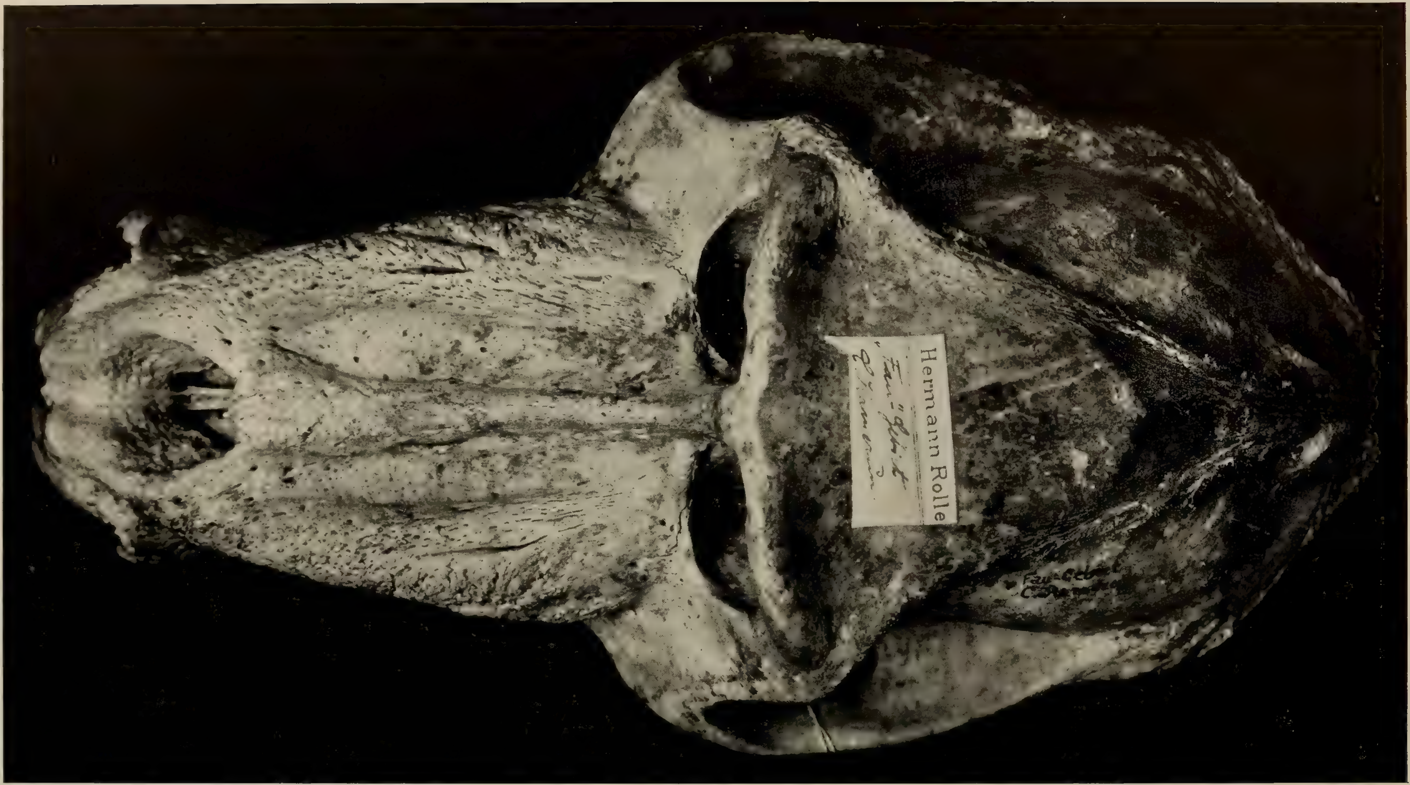


Papio planirostris.

No. ——? Berlin Mus. Coll. ¾ Nat. Size.


Hermann Rolle

Papio planirostris.

No. ———? Berlin Mus. Coll. ¾ Nat. Size.

abdomen black; tail gray, tip black; legs banded with black and buff, giving them a dark chestnut hue; callosities violet; genital and anal regions scarlet, beard yellow.

Measurements. Skull: total length, 233; occipito-nasal length, 183; Hensel, 175; zygomatic width, 137.4; intertemporal width, 69.3; palatal length, 113.9; breadth of braincase, 80.5; median length of nasals, 79.6; length of upper molar series, 51.5; length of mandible, 157; length of lower molar series, 72.6; length of upper canines, 44.2.

For nearly a hundred and fifty years this animal has been given the wrong name by all writers. Linnæus first called it *Simia* SPHINX, and then afterwards renamed a young Mandrill *Simia maimon.* In my paper in the Annals and Magazine of Natural History, (l. c.) the error into which all writers have fallen is corrected, and an explanation given, which is not necessary to repeat here.

The Mandrill is a thick-set powerful creature, whose face and buttocks are colored to an extravagant degree in blue and red, and when the animal is excited these hues are intensified. The head is very large in proportion to the body, and with the face painted, like that of a circus clown, and the small eyes deep set beneath the overhanging brows, it presents a bizarre and forbidding aspect. It is said to go in companies and the adults are very savage, their great strength and formidable canines, over an inch and a half long, making them dangerous antagonists, before whom an unarmed person would have a small chance of escaping with his life. They eat almost everything in the shape of food that can be masticated, but insects and fruits are the chief articles of their diet.

The females and young have the rostral ridges less prominent and differ in hue, and the end of the nose which is scarlet and so conspicuous in the males, is black.

PAPIO PLANIROSTRIS Elliot.

Papio planirostris Elliot, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 305.

Type locality. Fan, south eastern Cameroon, West Africa. Type in Berlin Museum.

Genl. Char. Skull only received, no skin. Size large, facial region much longer than braincase; rostrum very broad; ridges curved and not widely separated at center, not rising above level of nasals; very broad posteriorly; lateral pits long, moderately deep; entire width of orbits only slightly broader than widest part of rostrum; occipital region beneath, pyramidal, not rounded posteriorly; no sagittal crest, but ridges are continued from outer side of orbits, and meet on the interparietal; zygomatic arches not widely spread; pterygoid fossa long and narrow; palatal arch rounded; palate widest anteriorly; tooth rows straight; canines heavy, broad and rather short; molar teeth larger than in P. SPHINX.

This skull differs from that of the Mandrill in many particulars, the rostral region is much longer and wider; the central ridge is flatter, being below the top of the lateral ones for their entire length; narial opening broader and shorter; nasals broader anteriorly; central part of orbital ridges not depressed, making the orbits rounder; braincase broader and more rounded posteriorly and on a level with the orbital ridge, and rising gradually to occiput which is considerably higher than orbital ridge, while the braincase of P. SPHINX curves downward to the occiput which lies lower than the orbital ridge, and in the superior outline of the braincase these skulls are totally unlike; bony palate not so contracted posteriorly; basioccipital more abruptly descending to pterygoid fossa; tooth rows much longer; occipital region much more slanting than that of P. SPHINX which is nearly perpendicular. The second upper molar is much larger, and the second lower molar smaller, than the corresponding teeth of the species compared. It will be seen from the above that the skulls of the two species are quite different in nearly all respects.

Measurements. Skull: total length, 228; occipito-nasal length, 185; Hensel, 169; zygomatic width, 124.9; intertemporal width, 61; length of rostrum, 122; breadth of rostrum, 71.17; length of rostral ridges, 83; greatest width of orbits, 72; greatest width of braincase, 79; median length of nasals, 89; palatal length, 107.3; length of upper canines, 32.5; length of upper molar series, 55.9; length of mandible, 167; length of lower molar series, 78.

PAPIO LEUCOPHÆUS (F. Cuvier).

? *Simia* (*Papio*) *cinereus* Kerr, Anim. Kingd., 1792, p. 62; Allen, Bull. Amer. Mus. Nat. Hist., N. Y., VII, 1895, p. 185.

Simia leucophæa F. Cuv., Ann. Mus. Hist. Nat. Paris, IX, 1807, p. 477; Fisch., Syn. Mamm., 1829, p. 37.

Cynocephalus leucophæus F. Cuv., Hist. Nat. Mamm., Livr. IV, 1807, p. 637; 2nd ed., 1833, pp. 135, 142, pls. XLVIII, XLIX, L and LI; Desm., Mamm., 1820, p. 71; E. Geoff., Cours Hist.

Nat. Mamm., 1828, p. 31, 8me Leçon; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 166; V, 1855, p. 65; I. Geoff., Cat. Primates, 1851, p. 35; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 131, 133.

Mormon drill Less., Spec. Mamm., 1840, p. 114.

Hamadryas chœropithecus Less., Spec. Mamm., 1840, p. 108.

Papio leucophæa Gray, List Spec. Mamm. Brit. Mus., 1843, p. 10.

Mormon (*Drill*) *leucophæus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 162, pl. XXVII, figs. 401-403.

Chœropithecus leucophæus Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 35.

Papio leucophæus Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 131; Forbes, Handb. Primates, I, 1894, p. 260; Elliot, Cat. Mamm. Field Columb. Mus., F. C. M. Pub., VIII, 1906, p. 564, fig. LXXXVII, Zool. Ser.

Papio mundamensis Hilzheimer, Zool. Anz., April, 1906, Band XXX, p. 109.

DRILL.

Type locality. Unknown. Type in Paris Museum.

Geogr. Distr. North Cameroon, Konje Farm near Mundame (Hilzheimer); Victoria, (Strunck, Boscho, Adamelz), Berlin Museum.

Color. Face black, lower lip red; middle of head blackish brown; sides of crown greenish brown, the hairs being gray at base and ringed with brown and yellowish; hairs on sides of head and chin pale yellow tipped with brown, forming a sort of band from ear to throat; shoulders, and upper back, dorsal line, rump at root of tail, brownish black, the hairs being gray at base then ringed with black and yellow, and tips black; limbs, outer and inner sides mixed black and buff, with the hairs black ringed with buff and tipped with black, the arms showing more buff than the legs; middle of back and flanks pale brown; hands and feet mixed black and buff; under parts and inner side of limbs grayish white; tail brown at root, rest grayish white. Callosities red. Skull in specimen. Ex type Paris Museum.

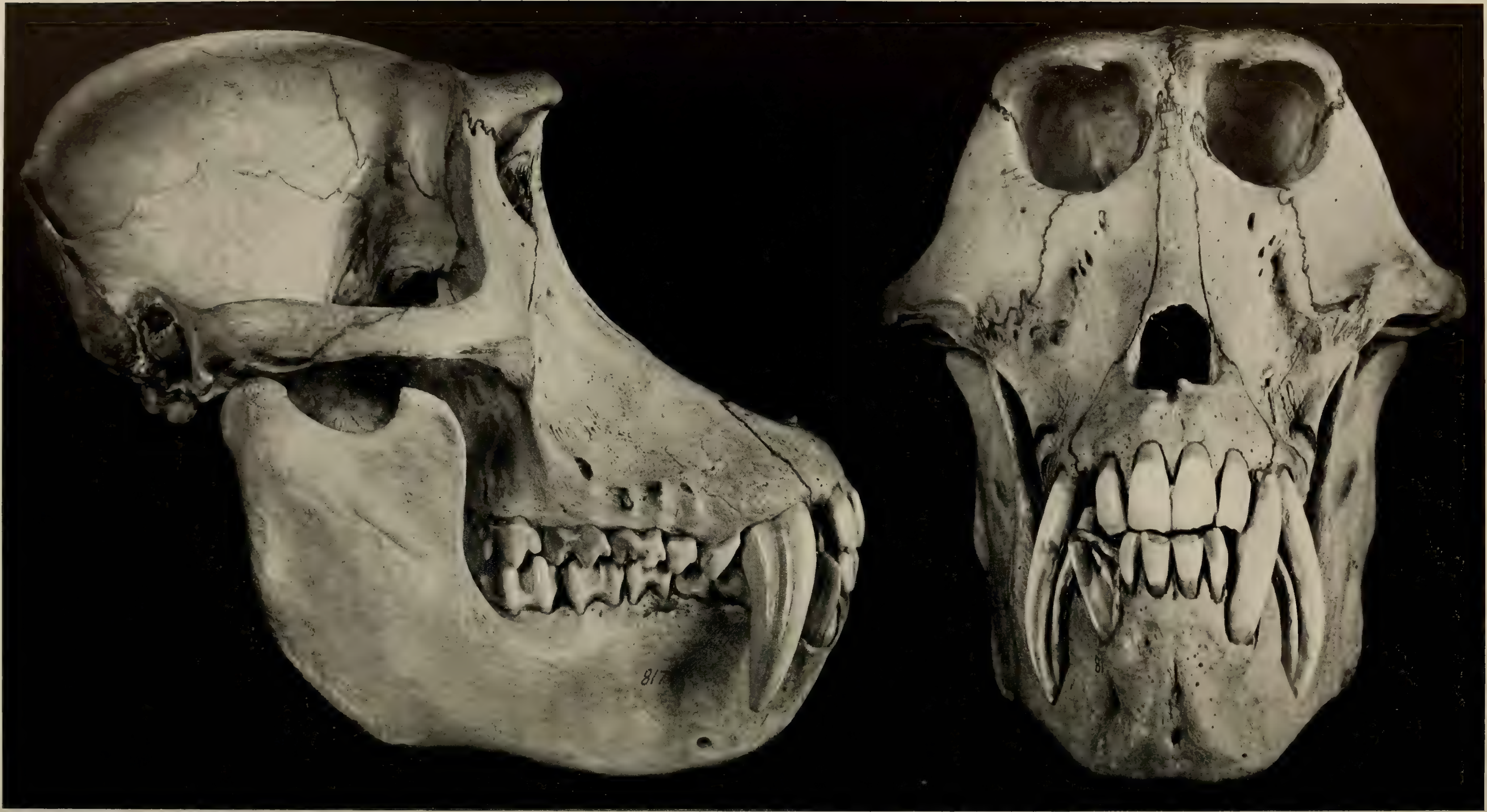
Measurements. Size almost equal to the Mandrill. Skull: total length, 216; occipito-nasal length, 166; Hensel, 155; zygomatic width, 120; intertemporal width, 61; median length of nasals, 45; length of upper molar series, 54; length of mandible, 159; length of lower molar series, 73. Ex skull in British Museum.

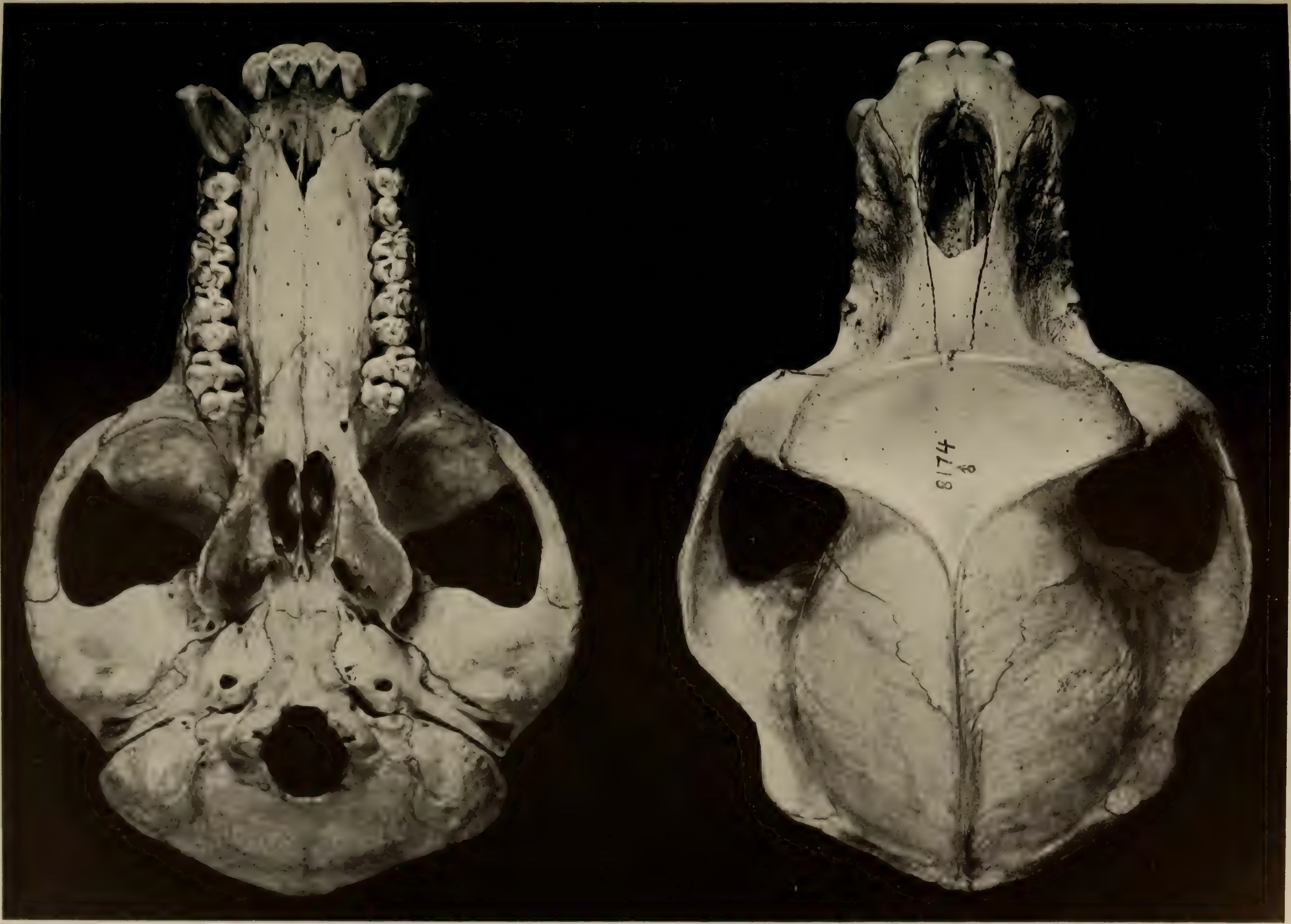
Herr Hilzheimer (l. c.) has described a specimen from near Mundame, North Cameroon, as distinct from P. LEUCOPHÆUS, mainly on account of having no white beard. But P. LEUCOPHÆUS has the hairs on chin hardly of a length to be termed a beard, as my description from the type, and Cuvier's plate testify, and Cuvier in his description in Hist. Mamm., says of the chin hairs, "forment une sorte de barbe," which is more *beard like* than an actual beard. Specimens in the Berlin Museum from Victoria, near Mundame and also from Boscho, are not separable from the true LEUCOPHÆUS. Herr Hilzheimer's example may not have been fully adult, the chin hairs not appearing long enough to be even beard like, and as he had no skull of LEUCOPHÆUS to compare his specimen with, he could not show that it was different in any way from that of Cuvier's species, and the Berlin specimen exhibits no distinctive characters. The hair on the chin and throat of P. LEUCOPHÆUS, while not particularly short, can hardly be considered as forming a beard.

Dr. J. A. Allen, (l. c.) has determined that Kerr's *Simia* (*Papio*) *cinerea* is this species. Kerr gave the name to an animal described by Pennant in his History of Quadrupeds, vol. I, p. 176, as follows: "Cinereous B. with a dusky face; pale brown beard; body and limbs of a cinereous brown; crown mottled with yellow."

Parts of this brief and unsatisfactory description may be applicable to the Drill, and we cannot prove that Dr. Allen was in error in his conclusion, neither can it be proved that he was undoubtedly correct, and therefore in view of the fact that it must ever remain questionable as to what species Kerr's description, (which is mainly a repetition of Pennant's), refers, it seems unwise to displace Cuvier's name, which has been universally employed for over a century, and was bestowed upon a species known and accepted by all Mammalogists, in favor of one whose type is exceedingly doubtful, and which can never be proved to be entitled to a specific recognition. The name LEUCOPHÆUS F. Cuv., has therefore been retained for the present species.

PLATE XVII.





THEROPITHECUS OBSCURUS.

No. 8174 Field Columbian Mus. Coll. ¾ Nat. Size.

GENUS THEROPITHECUS. THE GELADAS.

$$\text{I. } \frac{2-2}{2-2}; \quad \text{C. } \frac{1-1}{1-1}; \quad \text{P. } \frac{2-2}{2-2}; \quad \text{M. } \frac{3-3}{3-3} = 32.$$

THEROPITHECUS I. Geoff., Archiv. Mus. Hist. Nat., Paris, II, 1843, p. 576. Type *Macacus gelada* Rüppell.

Gelada Gray, List Spec. Mamm. Brit. Mus., 1843, pp. XVII, 9.

Chœropithecus Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, pp. 5, 35.

Nostrils on side of nose, not terminal. Canine teeth very long; lower molars quinquecuspidate. Body massive, size large; head crested; mane on shoulders present; tail long, tufted; whiskers long.

GEOGRAPHICAL DISTRIBUTION OF THE SPECIES.

Two species only are known belonging to this genus, both inhabiting Abyssinia, one, T. GELADA, from the southern portion, the other, T. OBSCURUS from the north eastern section, near the source of the Takazza River.

KEY TO THE SPECIES.

A. Mane large covering shoulders; tail tufted.
  - *a.* Legs iron gray ....*T. gelada.*
  - *b.* Legs from knees to ankles pale yellowish brown..*T. obscurus.*

THEROPITHECUS GELADA (Rüppell).

Macacus gelada Rüpp., Neue Wirbelth. Säugth., 1835, p. 5, pl. II; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 107.

Papio gelada Less., Spec. Mamm., 1840, p. 103.

Theropithecus gelada I. Geoff., Archiv. Mus. Hist. Nat., Paris, II, 1843, p. 576; *Id.* Cat. Primates, 1851, p. 32; Dahlb., Stud. Zool. Fam. Reg. Anim. Nat., fasc. I, 1856, p. 128, tab. VII, figs. 13, 15, 17, 19; Reichenb., Vollständ. Naturg. Affen, 1862, p. 163, figs. 396, 397; Forbes, Handb. Primates, I, 1894, p. 276.

Theropithecus niger I. Geoff., Archiv. Mus. Hist. Nat., Paris, II, 1843, p. 576.

Theropithecus senex Schimp. et Pucher., Rev. Mag. Zool., 1857, p. 243; Reichenb., Vollständ. Naturg. Affen, 1862, p. 150.

Gelada rüppelli Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 33; *Id.* Proc. Zool. Soc. Lond., 1879, p. 451; Forbes, Handb. Primates, I, 1894, p. 276.

GELADA BABOON.

Type locality. Mountains of Heremat, Simen and Axum, at an elevation of 7,000 to 8,000 feet, Abyssinia.

Geogr. Distr. Southern Abyssinia.

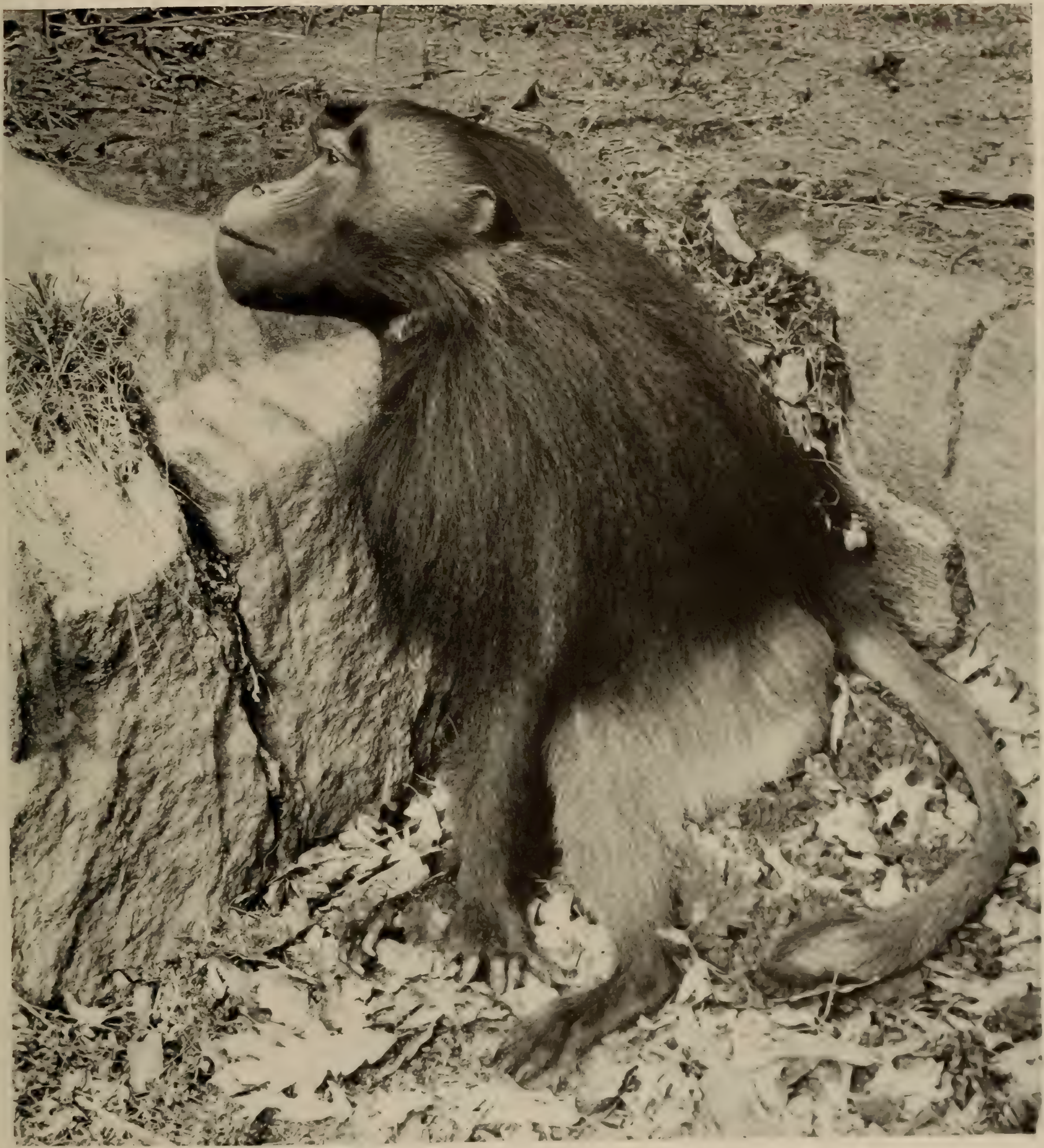
Genl. Char. Body powerful, sturdy; face nude; nose long, depressed in middle; head crested; back and shoulders and loins covered by a long mane; whiskers long, inclined backwards; chin, patch on throat, and one on breast, separated by a line of hair, nude; tail long, end tufted.

Color. Face black; nude places on chest red; mantle, back, flanks, whiskers and arms sooty chocolate brown; breast, shoulders, forearms, hands, feet and tail black; chest and upper arms and legs iron gray; callosities black.

Measurements. Total length about 1,525; tail to end of tuft, 800. Skull: total length, 164; occipito-nasal length, 125; Hensel, 121; zygomatic width, 110; interorbital width, 41; breadth of braincase, 72; median length of nasals, 32; length of upper molar series, 48; length of upper canines, 41; length of mandible, 118; length of lower molar series, 60.

The type of *T. senex* Schimper and Pucheran, is in the Paris Museum. It resembles T. GELADA in most particulars but is of a pale yellowish brown on sides of head, neck and hind limbs; tail entirely brownish gray with an immense tuft of the same color; middle of crown, chocolate brown; abdomen and belly ochraceous; forearms, hands and feet black; upper part of body and mantle blackish chocolate brown grading into grayish white on borders of mantle; upper edge of thighs dark brown. The light colors exhibited may be partly due to fading, but the specimen is considerably lighter on head and neck and hind limbs than T. GELADA, while the tail shows none of the black which is the prevailing color on the tail of Rüppell's species. But, however, as the locality of the specimen is the same as that in which T. GELADA is found, and no second example agreeing with *T. senex* has been procured since it was described, now half a century ago, it may safely be considered that this type represents merely an individual variation and not a distinct species. The skull is in the specimen.

The Gelada is a very handsome species, and the long heavy mane which covers the shoulders and upper part of the body, gives it a majestic appearance. The bare spot on the chest is very brightly



THEROPITHECUS GELADA

colored and makes a conspicuous mark, as the movements of the animal bring it into view.

Rüppell, who first discovered this species in the mountains of Abyssinia gives the following short account of its habits as observed by him:

"The Abyssinian name of this Ape is Gelada, and he lives in large families in regions covered with shrubs and rocks, keeping always on the ground. The food consists of seeds, roots and tubers, and rarely do they carry their depredations into cultivated fields. I observed the Gelada in the mountainous districts of Heremat, Simen and Axum, elevated regions 7,000 to 8,000 feet above the level of the sea. They retire to caves and fissures of the rocks, and when captured they make a loud noise resembling hoarse barks, but never defend themselves against men as the *Cynocephalus hamadryas* are accustomed to do."

Evidently the habits of this species are very similar to those of PAPIO HAMADRYAS, and doubtless such a powerful animal, as the Gelada undoubtedly is, would prove to be an equally formidable antagonist, and Rüppell's statement that they never defend themselves against men, must refer to the young, as one cannot but believe that the capture of an adult, especially of an old male, would be quite a serious undertaking.

THEROPITHECUS OBSCURUS Heuglin.

Theropithecus obscurus Heugl., Act. Acad. Leop., XXX, 1863, p. 30; *Id.* Beitr. Zool. Afric., XXX, pp. 12, 13; Reichenb., Vollständ. Naturg. Affen, 1862, p. 200, not figured; Forbes, Handb. Primates, I, 1894, p. 278; Elliot, Cat. Mamm. Field Columb. Mus., F. C. M. Pub., VIII, 1906, p. 566, Zool. Ser.

Theropithecus nedjo Reichenb., Vollständ. Naturg. Affen, 1862, p. 204.

Macacus obscurus Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 107.

DUSKY GELADA.

Type locality. Sources of the Takazza River, confines of the Galla country, Abyssinia.

Geogr. Distr. Southern Abyssinia.

Genl. Char. Large mane covering forepart of body and sides; tail tufted.

Color. Male. A patch on each side of top of head and whiskers yellowish; forehead between eyes extending in narrow line across crown, back of head and neck, upper part of body, mane, arms, hands and feet, black or brownish black; legs to ankles from knees, inner and outer sides pale yellowish brown; front edge of thighs dark reddish brown grading into pale yellowish on hinder parts; tail pale brown; throat black; chest and inner side of arms above elbows grayish white; bare spot on lower part of throat, and on chest as in T. GELADA; rest of under parts reddish brown.

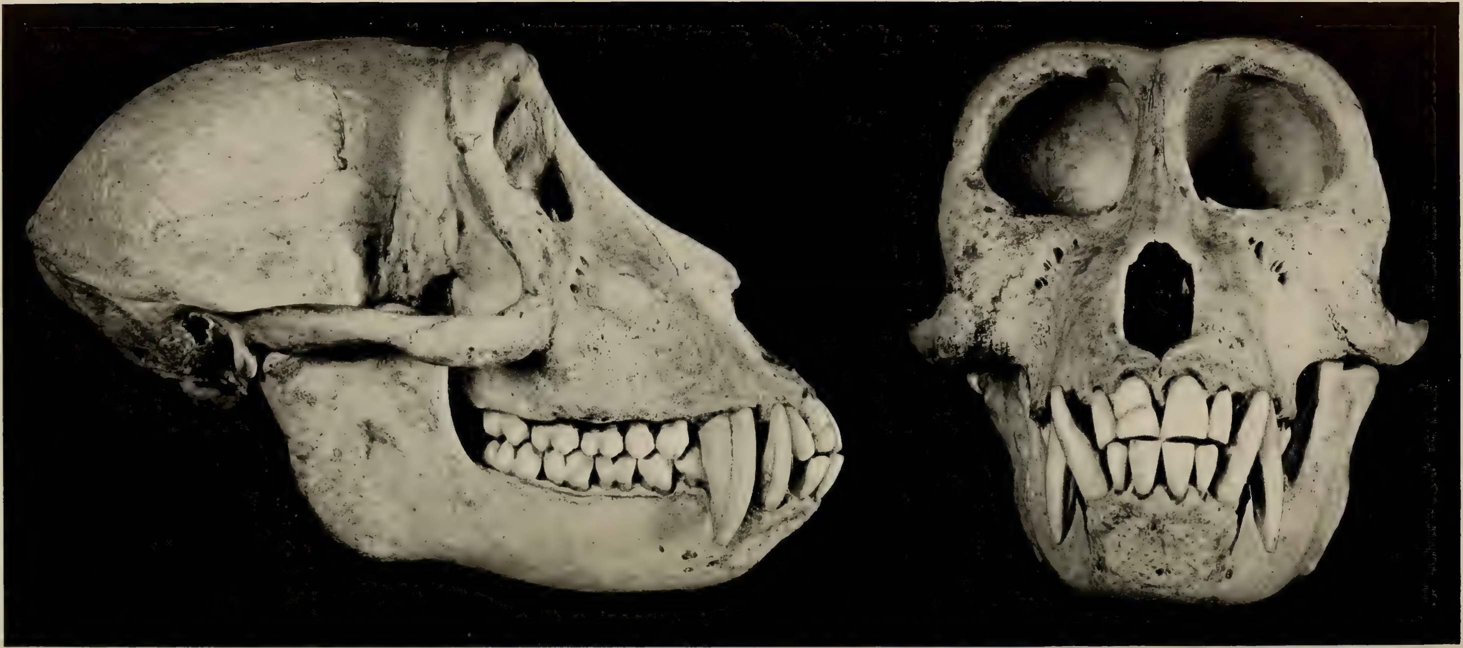
Female. Generally reddish brown without any mane.

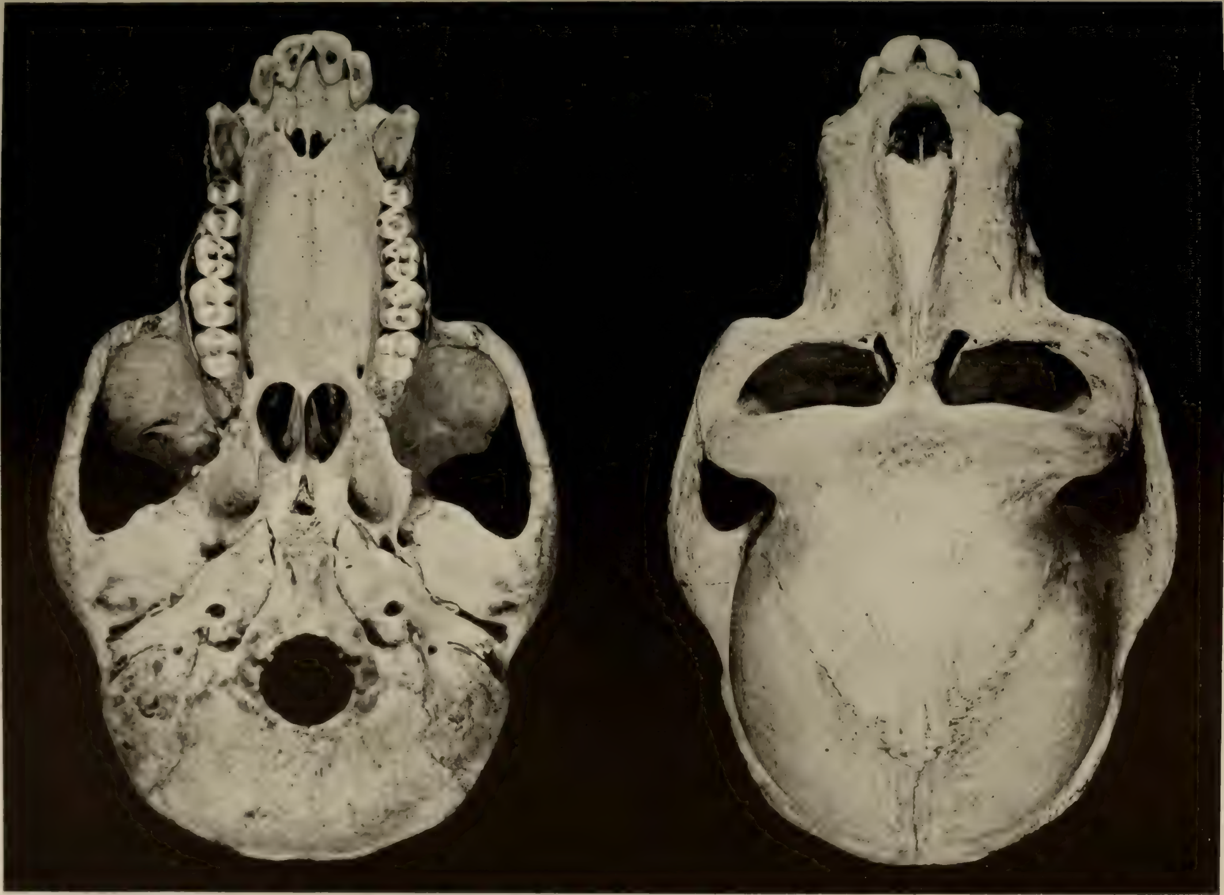
Measurements. Total length, 825; tail, 325. Skull: total length, 168; occipito-nasal length, 123; Hensel, 126; zygomatic width, 118; intertemporal width, 44; median length of nasals, 33; length of upper molar series, 49; length of mandible, 132; length of lower molar series, 64.

Von Heuglin was the discoverer of this fine species, and gives, (l. c.) the following account of it:

"This magnificent Ape lives in large troops in southern Abyssinia in the Takessah-Suringland in the Provinces of Lasta, Wadla, Talanta, Daund, Seint-Amara and Woro-Heimann, in the land of Jedju and Wollo-Galla at an elevation of from 6,000 to 10,000 feet above the level of the sea, mostly in rocky ravines. They are seldom seen in trees, but usually on open places, or on steep inaccessible rocks, from which they try to throw stones at their pursuers.

"They pass the night together in caves, and come forth at break of day, and sit for hours in the morning sun for warmth, and then seek in the low valleys, their food, which consists, apparently, almost exclusively of leaves, but perhaps they may visit fields where fruits grow. Their dispositions appear to be quite harmless. The herd consists of 20 to 30 families and young, and is led usually by four or six old males who march with solemn step while the young play about, or are carried by the mothers, and are kept in order by pinching or boxing the ear. If danger approaches, the discoverer utters a loud cry, and the troop unites, and if necessary returns to the rocks. The old males that go by themselves, are more afraid than the females, who standing erect often yell at the pursuer, and show their white teeth. When on a predatory excursion, or in flight, which is not usually very rapid, they go mostly in a line, with an old individual in the rear. Rarely do different herds unite, but at the approach of evening, each returns to its regular quarters. The voice is shrill, that of the old males hoarse. One of the chief enemies of the 'Tekur-Sindiere' is the Kaffir-eagle, also the Lamb Vulture (Golden Vulture). In their viscera, especially in the cæcum, is found a kind of Echinorrhynchus in great numbers."





CYNOPITHECUS NIGER.

No. 22397 U. S. Nat. Mus. Coll. 4/5 Nat. Size.

GENUS CYNOPITHECUS. BLACK APE.

$$\text{I. } \frac{2-2}{2-2}; \quad \text{C. } \frac{1-1}{1-1}; \quad \text{P. } \frac{2-2}{2-2}; \quad \text{M. } \frac{3-3}{3-3} = 32.$$

CYNOPITHECUS I. Geoff., Résum. Leç. Mamm., 1835, p. 16. Type *Cynocephalus niger* Desmarest.

Fur long, woolly; head with hairy crest. Face, neck, hands and feet, naked; nose triangular, flattened behind nearly to the eyes; upper lip broad; broad partition between nostrils directed downward and outward; cheek swellings distinct; supra-orbital ridges conspicuous; cheek pouches large; tail rudimentary. Braincase considerably elevated above orbital ridge; zygomatic arch straight; orbital ridge with but slight overhang; nasals tapering rapidly to a point posteriorly; facial angle with outward curve; molar series small.

But little is known of the Black Ape of Celebes, and the material contained in all the Museums, the specimens for the most part being young animals, is not sufficient to permit a satisfactory decision as to the number of species and their dispersion, to be reached. Herr Matschie has recognized all the described forms and added to them five more. His material, however, is totally inadequate for any satisfactory opinion to be arrived at, consisting as it does, mainly of the young animals from Zoological Gardens, in some cases, without localities or data of any kind whatever. It is impossible, therefore, at present to recognize these; and the writer is not at all confident that in accepting four of the species described by various authors, he has not exceeded the limit of the distinct forms, and that some may be found merely exhibiting a phase of pelage arising from age or sex, of longer known species. Two genera of Monkeys exist in Celebes, and their young are strikingly alike, and from them it is quite impossible to tell what species each one may eventually represent.

LITERATURE OF THE SPECIES.

1820. *Desmarest, Mammalogie ou Description des Espèces de Mammifères.*
CYNOPITHECUS NIGER first described as *Cynocephalus niger.*

1829. *Fischer, Synopsis Mammalium.*
C. NIGER described as *Simia niger.*

1847. *C. J. Temminck, Coup-d'œil général sur les Possessions Neerlandaises dans l'Inde Archipelagique.*
CYNOPITHECUS NIGER redescribed as *Papio nigrescens.*

1851. *I. Geoffroy St. Hilaire, Catalogue des Primates.*
Two species are here given: C. NIGER, and C. *nigrescens* = C. NIGER.

1855. *Wagner, Schreber, Die Säugthiere, in Abbildungen nach der Natur mit Beschreibungen. Supplementband.*
Two species only are here recorded, C. NIGER, and *C. nigrescens* = C. NIGER, in *Cynocephalus,* under CYNOPITHECUS as a subgenus, and a figure of the latter species given on plate VI.

1870. *J. E. Gray, Catalogue of Monkeys, Lemurs and Fruit-eating Bats, in the Collection of the British Museum.*
One species is given in this list, CYNOPITHECUS NIGER; and C. *nigrescens* Temm., is considered as a "browner or grayer" variety.

1876. *Schlegel, Muséum d'Histoire Naturelle des Pays-Bas. Simiæ.*
In this work but one species of CYNOPITHECUS is recognized, C. NIGER Desmarest. The Author remarks upon the variation in color of examples dwelling at different places in northern Celebes, and in the Island of Batchian, also on the different shape of the callosities. He, however, regards these as merely individual variations, and decides that the two forms, NIGER and *nigrescens,* the only ones known to him, represent but one and the same species; and in the more than thirty years that have elapsed since his work appeared, sufficient additional knowledge of these Apes has not been acquired to enable us to prove that Schlegel was not quite correct in the decision he gave.

1901. *P. Matschie, in Senckenbergische Naturforschende Gesellschaft.*
In his paper on the mammals of Halmahera, Batchian and North Celebes, the Author reviews the species of the genus CYNOPITHECUS, but placed in PAPIO, and criticizes to some extent, the papers of A. B. Meyer previously published on the same animals. He first discusses the relationship of CYNOPITHECUS and *Macacus,* and allied genera, and the species properly belonging to each, and their geographical distribution. As our present investigation is mainly with the species of

CYNOPITHECUS, to follow him in this part of his paper would take us too far afield, and we will consider his review only as it relates to the black monkeys of Celebes. He recognizes the following species: C. NIGER Desm., C. *nigrescens* Temm. = C. NIGER, with a comparison of their skulls; C. TONKEANUS Meyer; *P. inornatus* Gray, = C. MAURUS (F. Cuv.), juv.; C. OCHREATUS Ogilby, and C. MAURUS (F. Cuv.). He describes as distinct from these *P. hecki,* probably from Buol, in the northwestern peninsula, the locality from which *P. nigrescens* Temm., was described, and *hecki* is the same as that form; *P. tonsus* from an immature animal and no locality, which = C. TONKEANUS from the eastern or middle peninsula; *P. hypomelas* no locality given, but which he says is not quite adult and stands between his *tonsus* and *inornatus,* and its skull is similar to that of the last named, *inornatus,* and with that form also, both = C. MAURUS (F. Cuv.); and lastly, *P. brunescens* from the south easterly peninsula, and Island of Buton. The type of this last named is a very young animal, too young to exhibit any distinctive characters, and probably is the same as C. OCHREATUS which inhabits the same peninsula. In order to localize the species described, the various peninsulas have been divided into northern, southern, eastern and western portions, without any definite information that the forms indicated are thus restricted.

GEOGRAPHICAL DISTRIBUTION OF THE SPECIES.

It must be confessed that with only our present inadequate knowledge of the species of the genera CYNOPITHECUS and MAGUS, their distribution in the Island of Celebes is mostly guesswork. Matschie's dispersal of the species he recognizes is, at least in part, purely imaginary, and he has no positive information that any of the species were restricted within the boundaries he gave them. We think we know that certain species come from certain parts of the island, but what may be their boundaries, or whether they have any at all, we have no certain knowledge. The following is supposed to be the dispersion of the species recognized in this work: In the northern peninsula from Minahassa on the east to Tomini on the west, and down the west coast to Balanipa, and also on the small mountainous Island of Menado-toua off the northeastern extremity of Celebes, and the Island of Batchian, C. NIGER is found.

CYNOPITHECUS NIGER (Desmarest).

Cynopithecus niger Desm., Mamm., 1820, p. 534; Quoy et Gaim., Voy. Astrolabe, I, 1830-33, p. 44, pl.; Wagn., Schreb., Säugth. Suppl., I, 1855, p. 61; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, p. 122.

Inuus niger Wagn., Schreb., Säugth. Suppl., I, 1840, p. 147.

Cynopithecus niger I. Geoff., Bélang., Voy., 1834, p. 66; *Id.* Archiv. Mus. Hist. Nat., Paris, II, 1843, p. 574; Less., Spec. Mamm., 1840, p. 101; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 33; Forbes, Handb. Primates, I, 1894, p. 281; Bedd., Proc. Zool. Soc. Lond., 1903, p. 19, figs. 7, 8, (Brain).

Papio niger Temm., Possess. Neederl. Ind., III, 1847, p. 111.

Papio nigrescens Temm., Possess. Neederl. Ind., III, 1847, p. 111, juv.; Matschie, Abhandl. Senck. Nat. Ges., 1901, p. 256, pl. II; Meyer, Abhandl. Mus. Dresd., 1896, No. 6, p. 5; 1899, No. 7, p. 4.

Cynopithecus nigrescens I. Geoff., Cat. Primates, 1851, p. 32; Reichenb., Vollständ. Naturg. Affen, 1862, p. 164; Gray, Proc. Zool. Soc. Lond., 1860, p. 4.

Papio (*Inuus*) *niger* Matschie, Abhand. Senck. Nat. Gesc., 1901, pp. 247, 248, fig.

Papio (*Inuus*) *hecki* Matschie, Abhand. Senck. Nat. Gesc., 1901, pp. 248, 257, fig. juv.

Papio (*Inuus*) *hypomelas* Matschie, Abhand. Senck. Nat. Gesc., 1901, pp. 261, 262, juv.

BLACK APE

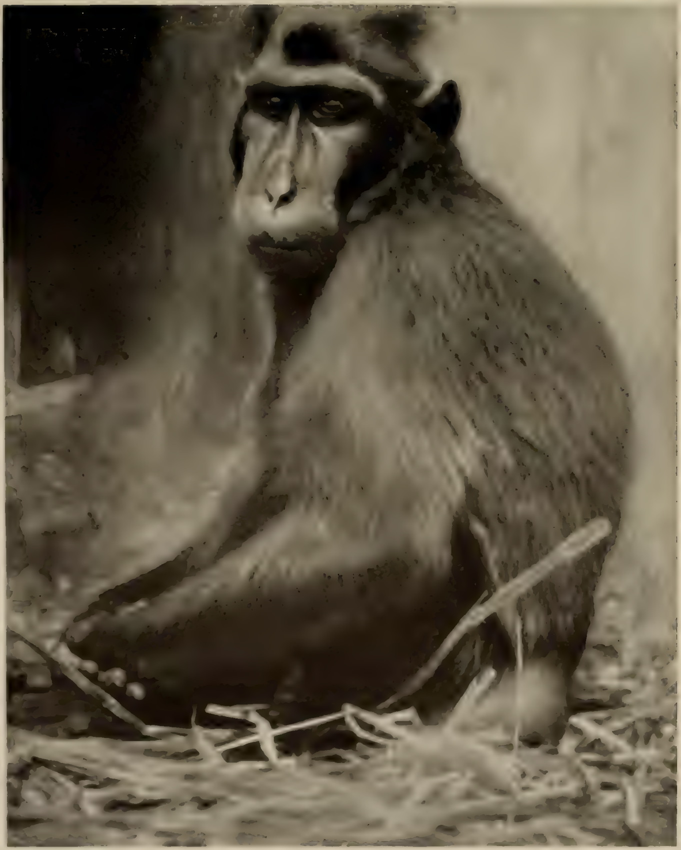
Type locality. "One of the islands in the Indian Archipelago."

Geogr. Distr. Northern peninsula of Island of Celebes, and down western coast to Balanipa; Island of Batchian (Wallace); Island of Menado-toua (Schlegel).

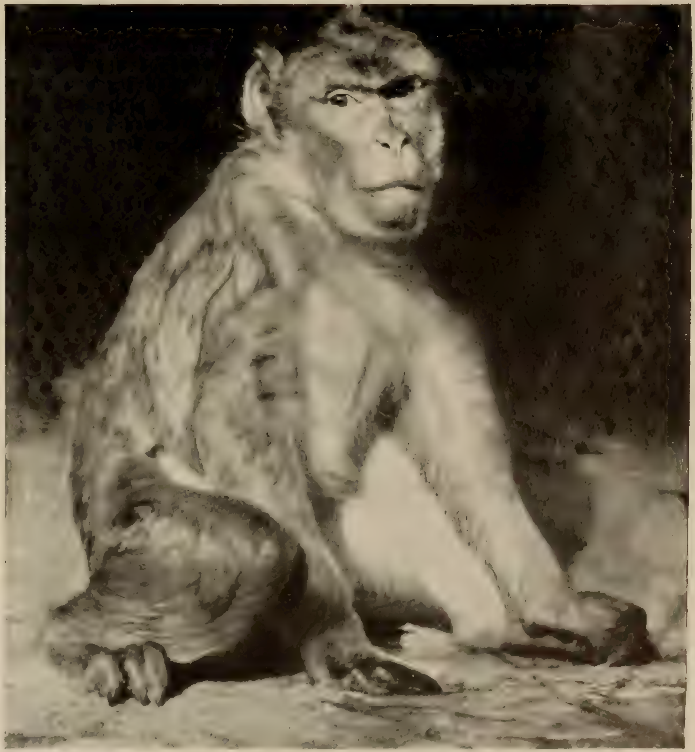
Genl. Char. Head tufted; adult black; young with more or less of a uniform brown according to age; tail rudimentary, maxillary pit deep.

Color. Entire pelage jet black; face, hands and feet black.

Young. More or less of a uniform brown according to age, with the limbs, hands, feet and top of head, black. The callosities seem to change according to age, being small and divided when young, but becoming large and almost united, especially in old males, with the bare space greatly extended. The division of the callosities varies with individuals, as Schlegel also testifies (l. c. p. 119), and cannot be



CYNOPITHECUS NIGER.



SIMIA SYLVANUS.

regarded in any way as a specific character. A series of this species in the Leyden Museum from Lembeh and Minahassa, show that the young are brown on the back and shoulders varying in depth among individuals; belly, usually black.

There are four examples in the Leyden Museum which, according to Schlegel, served as types for Temminck's species. *P. nigrescens,* three, Nos. 6, 8, and 9 from Gorontalo, and No. 7, from Toulabello. Of these only No. 6 can be a type, as the others were only collected in 1864 by Rosenberg; and lastly No. 10, not mentioned by Schlegel as a type. They are all immature, No. 9 being quite a baby, the other three about three quarters grown. As is to be expected none of them are black as the adult would be, but exhibit the brown coloring characteristic of young animals of C. NIGER, with the limbs, hands, feet and top of head black. I can perceive no characters to distinguish these examples from those of C. NIGER of a similar age, and agree with Schlegel, that they cannot be separated from that species.

Description of *C. hecki:*

Color. Head, neck and upper part of back, black, with a strong reddish brown tinge, it might almost be called blackish brown; upper parts and sides black; arms blackish mars brown; legs dark wood brown; under parts and under side of limbs, reddish brown, (dark mars brown), callosities very large, lying across the buttocks, in shape of a parallelogram. Ex type Berlin Museum.

Measurements. Total length, 666. Skull: total length, 137; occipito-nasal length, 118; Hensel, 95; zygomatic width, 91; intertemporal width, 46; median length of nasals, 41; length of upper molar series, 31; length of mandible, 94; length of lower molar series, 42. Ex type in Berlin Museum of *C. hecki.* The skull is a true CYNOPITHECUS but not so broad on the rostrum comparatively as that of C. NIGER, but it is more typical than many of the others.

The type is a young animal and there are indications on both arms and legs of a change from brown to the black of the adult; thus, the black on the thighs has extended from the hips nearly half way to the knees; and on the feet, and especially on the inner side of the leg, the black is beginning to appear.

The description of *C. hypomelas* is as follows:

Color. Head crested, with upper part of back reddish brown almost black; back and outer side of limbs, black tinged with brown; side of head Prout's brown; under parts blackish brown; inner side of limbs reddish brown.

Measurements. Total length, 680. Skull: total length, 132; occipito-nasal length, 109; Hensel, 91; intertemporal width, 48; zygomatic width, 84; median length of nasals, 20; length of upper molar series, 32; length of mandible, 92; length of lower molar series, 42. Ex type Berlin Museum.

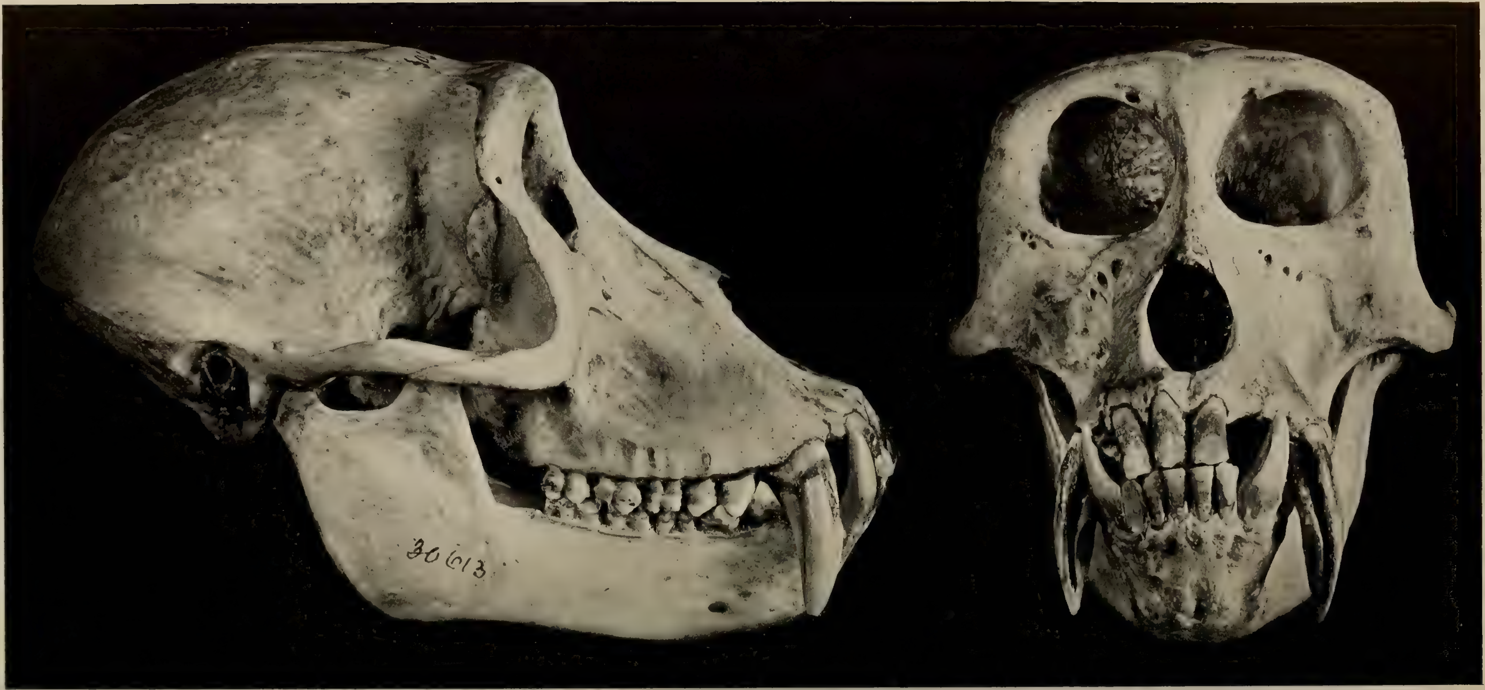
This is an animal more brownish than black, and with long narrow callosities, and the hair on rump restricted to the center above the button of a tail.

The skull of this form has a short face and the rostrum narrows rapidly anteriorly not retaining the broad shape of typical CYNOPITHECUS, and is more like PITHECUS.

The type was obtained from the Zoological Gardens, and was without locality, and giving the range as in the middle western portion of Celebes is, as indicated by Herr Matschie, merely a supposition. The type not being adult and without locality, should for the present be placed with C. NIGER as having more affinity with that species than any other.

All the material in the Berlin Museum has been examined.

Of *C. hecki* all the specimens, seven in number, were obtained from the Zoological Gardens as stated by Herr Matschie in his paper. Unfortunately they are without any authenticated locality, and most of them are young, so, for scientific identification, they are practically without value, as it is not known if the specimens all came from one locality or from several, and it may be possible that some may have been born in captivity. Herr Matschie places its habitat at the north western part of Celebes, because a specimen which is considered to be the same, was received by the Dresden Museum from this part of Celebes. As *nigrescens* Temminck, now deemed inseparable from C. NIGER, is found from Gorontalo to Tomini, and probably also on the northern part of this section of Celebes as well as on the west coast (*C. hypomelas*), and there not being sufficient evidence in the available material of so-called *C. hecki,* (the majority of specimens including the type being very young), to separate it from C. NIGER, it would seem best to consider it the same as that species, leaving the question to be definitely decided at some future period when ample materials with authenticated localities may have been gathered. Of *C. hypomelas* practically nothing is known as already stated. The shape of the callosities either in one mass or divided in the center, varies with individuals, and I am inclined to regard the different shapes as dependent upon the age of the animal, or a variation of a particular example. At present too little is known about it, for it to be accepted as indicating a specific character.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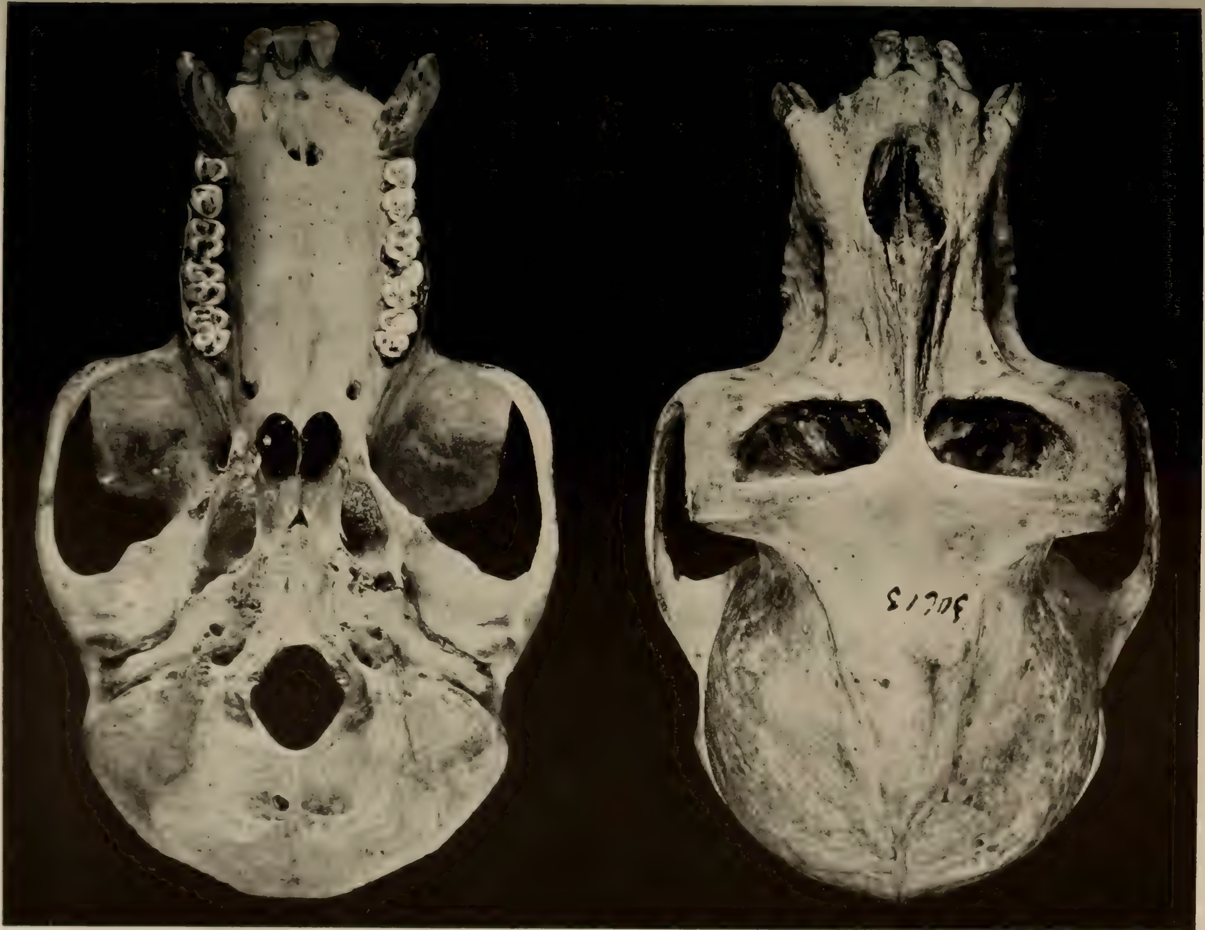


MAGUS OCHREATUS.

No. 30613 Amer. Mus. Nat. Hist. Coll. ⅘ Nat. Size.

GENUS MAGUS. CELEBES MACAQUES.

$$I.\ \frac{2-2}{2-2};\quad C.\ \frac{1-1}{1-1};\quad P.\ \frac{2-2}{2-2};\quad M.\ \frac{3-3}{3-3}=32.$$

MAGUS Less., Man. Mamm., 1827, pp. 43, 44. Type *Macacus maurus* F. Cuvier.

Gymnopyga Gray, Proc. Zool. Soc. Lond., 1864, p. 518.

Head without crest; face black; tail rudimentary; callosities present. Rostrum lengthened, narrower than CYNOPITHECUS. Skull more like that of PITHECUS. Braincase broad, rounded, slightly elevated above orbital ridges, zygomatic arch much curved; orbital ridge overhanging orbits; nasals tapering very gradually to posterior end; angle of face not curving outward; molar series large.

The Monkeys of Celebes without hairy crest resemble the Macaques much more than they do the crested or black Ape of that island, and some neighboring ones. They have short thick-set bodies, with rudimentary tails, and judging from a living adult in the Zoological Gardens at Kyoto, Japan, they would appear to reach a large size. Not much is known about them, and adult examples are very rare in the Museums of the world.

LITERATURE OF THE SPECIES.

1823. *F. Cuvier, Histoire Naturelle des Mammifères.*
MAGUS MAURUS first described.

1827. *Lesson, Manuel de Mammalogie.*
The genus MAGUS first instituted for *Macacus* MAURUS F. Cuv.

1829. *Fischer, Synopsis Mammalium.*
MAGUS MAURUS redescribed as *Simia cuvieri.*

1840. *Ogilby, in Proceedings of the Zoological Society of London.*
MAGUS OCHREATUS first described as *Macacus ochreatus.*

1844. *Schinz, Systematisches Verzeichniss aller bis jetzt bekannten Säugethiere oder Synopsis Mammalium nach dem Cuvier'schen System.*
MAGUS OCHREATUS redescribed as *Macacus fusco-ater.*

1866. *J. E. Gray, in Proceedings of the Zoological Society of London.* MAGUS MAURUS redescribed from an immature individual, as *Macacus inornatus.*

1897. *A. B. Meyer, in Abhandlungen und Berichte Königl. Zoologischen Anthropologisch-Ethnographischen Museums zu Dresden.*

In a paper on the "Säugethiere von Celébes und Philippinen Archipel" three species are recorded, and placed in *Cynopithecus.* C. MAURUS, C. NIGER and C. *nigrescens,* with remarks on their distribution. Three plates are given with figures of animals of different ages all as (*C.*) MAURUS, (here called *Macacus* MAURUS), and two of skulls of *Macacus* MAURUS (nec Cuvier), and CYNOPITHECUS NIGER. The figures on the plates represent different species, although not so recognized by the Author. No. 1 from Bantimurung, southwest Celebes, is an immature animal in the brown pelage, such as was described by Gray as *Macacus inornatus,* and *Macacus* MAURUS F. Cuvier, (nec Meyer), also an immature animal; Nos. 2 from Buton Island, and 3 from Wandari, southeastern Celebes, also immature individuals = M. OCHREATUS; and Nos. 4 and 5, from Tonkean, eastern Celebes, are *Macacus maurus* Meyer, (nec Cuvier).

1899. *A. B. Meyer, in Abhandlungen und Berichte Königl. Zoologischen Anthropologisch-Ethnographischen Museums zu Dresden.*

In this paper the Author reviews the specimens in the Dresden Museum, and comparing his Tonkean examples, called by him in the previous paper, *Macacus maurus,* with an old male of the true MAURUS from Pik von Bonthain in the extreme south of the south western peninsula of Celebes, separates them as *Macacus tonkeanus* = MAGUS TONKEANUS. On plate I a figure is given of MAGUS MAURUS, an old male from Pik von Bonthain, and on plate II figures of its skull.

GEOGRAPHICAL DISTRIBUTION OF THE SPECIES.

In the middle eastern peninsula of the Island of Celebes, M. TONKEANUS occurs, and in the southeastern peninsula M. OCHREATUS is met with, and also in the islands of Muna and Buton; and in the southwestern peninsula, and doubtfully in the Aru Islands, M. MAURUS ranges.

KEY TO THE SPECIES.

A. Head not crested.
  a. Arms and legs white, streaked with black; hands and feet black.....................*M. ochreatus.*
  b. Forearms and inner side of thighs to knees gray; hands and feet gray...................*M. maurus.*
  c. Arms, inner side of thighs to below knees, hands and feet black.......................*M. tonkeanus.*

MAGUS OCHREATUS (Ogilby).

Macacus ochreatus Ogilby, Proc. Zool. Soc. Lond., 1840, p. 56; Sclat., Wolf's Sketches, II, 1865, pl. I; *Id.* Proc. Zool. Soc. Lond., 1860, p. 420, pl. LXXXII; 1871, p. 223; Anders., Zool. Res. Exped. Yunnan, 1878, p. 81, (Part.); Murie, Proc. Zool. Soc. Lond., 1872, p. 723.

Macacus fusco-ater Schinz, Syn. Mamm., I, 1844, p. 58.

Macacus maurus ochreatus Reichenb., Vollständ. Naturg. Affen, 1862, p. 142, fig. 408.

Macacus maurus (nec F. Cuvier), Meyer, Abhand. Mus. Dresd., 1897, p. 1, pl. I, fig. 2, juv. ♂, Bouton, fig. 3, ex Kandari, Celebes.

Papio (*Inuus*) *brunescens* Matschie, Abhand. Senck. Nat. Gesc., 1901, p. 257.

Type locality. Unknown.

Geogr. Distr. Southeastern peninsula of Celebes, and Islands of Muna and Buton.

Genl. Char. Callosities round, bare spaces on scrotum large; hairs reaching the tail in a point.

Color. Top of head and upper parts, thighs and arms to elbows black; outer side of forearms and legs light gray; under parts blackish brown; hands and feet black; inner side of limbs yellowish gray.

Measurements. Total length, 337; tail, 27. Skull: total length, 125; occipito-nasal length, 104; Hensel, 80; intertemporal width, 42; zygomatic width, 70; median length of nasals, 26; length of upper molar series, 30; length of mandible, 13; length of lower molar series, 33. Ex specimen Berlin Museum.

A black animal with light gray legs.

A fine living individual of this species was in the Zoological Gardens at Kyoto, Japan, and may be described as follows: Face black;

top of head gray, streaked with black; upper parts, shoulders, sides of body and outer side of thighs black; whiskers white; arms and legs white streaked with black; hands and feet black; under parts blackish; chest grayish white; ears black; buttocks hairy; callosities small, red.

This was a large animal for the species of this genus, powerfully and compactly built, and in appearance was a grayish white monkey with a black back. The head was round in shape, the muzzle rather short, and the hair on the crown was thick, and short without any indication of the crest. It was said to have come from Celebes, but no particular locality on the island was given. It was evidently one of the finest species of MAGUS.

One of the characters that seems to separate MAURUS F. Cuv., from OCHREATUS Ogilby, is the color of the hands and feet, these being grayish in MAURUS and black in OCHREATUS, the young of both being more or less brown according to age. The material for the study of the development of these animals is insufficient in all Museums, and if all that are contained in collections were brought together, it would not be enough to determine how many species there really are. The specimens that have been named and described have, in the great majority of cases, been young animals, some even without localities, and in such cases it is impossible to say, with any degree of certainty, to what species they belong. Dr. Meyer did not appear to know M. OCHREATUS, and the determination of his specimens seemed to depend on whether or not they were M. MAURUS. Cuvier's type is not a fully adult animal, but the color of its hands and feet would seem to prove it was not M. MAURUS, but more probably the animal was in a state of pelage characteristic of *M. ochreatus*.

Meyer, (l. c.) in his plate of M. MAURUS F. Cuv., figures two individuals which I consider are (*C.*) OCHREATUS Ogilby, and numbered 2 and 3. No. 2 is a young male from the island called Buton at the extremity of the southeastern peninsula of Celebes, the locality which Matschie (l. c.) apportions to his *C. brunescens*. This No. 2 is brown with forearms and thighs gray, but no jet black yet appearing on the pelage anywhere, saving outside of the rostrum. No. 3 is a young female from Kandari, on the eastern part of the southeastern peninsula of Celebes in the range Matschie gives to M. OCHREATUS. This individual has the three molars still undeveloped, as in No. 2, but it is nearly all black with the gray arms, legs and throat of the adult M. OCHREATUS. Matschie's *brunescens,* the type, is a very young animal, too young to have any reliable specific characters established by it, but as we know that the young of M. OCHREATUS are brown it is most probable that this individual belongs to that species, which thus ranges over the southeastern peninsula of Celebes and its outlying islands. My description taken from the type of *brunescens* is as follows: "Head and upper parts, arms to elbows and thighs dark brown tinged with umber; under parts and inner side of limbs yellowish white; forearms, legs, hands and feet wood brown." Total length, 544; tail, 44, (skin).

In the Collection of the New York Museum, are five specimens of this species: one adult male, three adult females, and one young female, all obtained by Mr. Roy C. Andrews on Buton Island, off the southeastern coast of Celebes.

MAGUS MAURUS (F. Cuvier).

Macacus maurus F. Cuv., Hist. Nat. Mamm., 1823, pl. XLV; 2nd ed., 1833, p. 109, pl. XXXIX; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 146, (footnote); I. Geoff., Cat. Primates, 1851, p. 31, (footnote); Sclat., Proc. Zool. Soc. Lond., 1860, p. 420; 1871, p. 222; Reichenb., Vollständ. Naturg. Affen, 1862, p. 142, figs. 368-370; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 32, (note); Murie, Proc. Zool. Soc. Lond., 1872, p. 722; Anders., Zool. Res. Exped. Yunnan, Mamm., 1878, p. 80; Meyer, Abhand. Mus. Dresd., 1898, No. 7, p. 2, pls. I, II.

Magus maurus Less., Man. Mamm., 1827, p. 44, juv.

Simia cuvieri Fisch., Syn. Mamm., 1829, p. 30.

Macacus inornatus Gray, Proc. Zool. Soc. Lond., 1866. p. 202, pl. XIX, juv.; Matschie, Abhand. Senck. Nat. Gesc., No. 7, 1901, p. 262, pl. II.

Type locality. Celebes.

Geogr. Distr. Southwestern peninsula of the Island of Celebes; Aru Islands.

Genl. Char. Head without crest; inner side of thighs grayish white.

Color. Top of head, upper parts, shoulders and outer side of arms to near wrists, legs to ankles, outer sides of thighs, and under parts of body brownish black, with many white hairs intermingled; sides of head yellowish brown; throat, chest, inner side of arms, buttocks and inner side of thighs, hands and feet grayish white; tail brownish black above, black beneath.

Measurements. "Lip to anus, (all curves measured), 720; foot, 165. Skull: total length, 143; breadth of forehead, 71.5; breadth between canines, alveolar border, 35.6; least breadth of Pterion, 44.4; greatest breadth of Pterion, 55." (Meyer).

The type of *M. inornatus* Gray, is an immature animal with a uniform brown color on upper parts and flanks. As it has no particular locality it may possibly be the young of either of the three species of MAGUS, as these resemble each other so closely when immature as to present no indication as to which species they belong. Dr. Sclater once purchased two young, supposedly of M. MAURUS. One developed into that species, the other into M. OCHREATUS.

The *Macacus* MAURUS F. Cuvier, (l. c.) with its entire dark brown pelage and black face would seem to be an individual in immature pelage, for the young of the species of either MAGUS or CYNOPITHECUS do not resemble the adults, but are generally of a brown color and take on the other hues such as black, gray, etc., as they progress towards maturity. Thus Meyer (l. c.) figures a young female from Bantimurung, in south western Celebes, No. 1, an individual, as he states, with "three molars still undeveloped," as altogether in the brown pelage. This example is like the *M. inornatus* Gray, (l. c.) and both would be the same as M. MAURUS, which is supposed to come from that part of Celebes, if *M. inornatus* really comes from the same part of the island.

MAGUS TONKEANUS (Meyer).

Macacus maurus (nec F. Cuv.), Meyer, Abhand. Berich. Mus. Dresd., 1897, p. 1, pl. I, figs. 4, juv. ♂ 5, ♀ ad.

Macacus tonkeanus Meyer, Abhand. Berich. Mus. Dresd., 1899, No. 7, p. 3; Matschie, Abhand. Senck. Nat. Ges., 1901, p. 258.

Papio (*Inuus*) *tonkeanus* Matschie, Abhand. Senck. Nat. Ges., 1901, p. 259.

Papio (*Inuus*) *tonsus* Matschie, Abhand. Senck. Nat. Ges., 1901, p. 261.

TONKEAN BLACK BABOON.

Type locality. Tonkean, Island of Celebes. Type in Dresden Museum.

Geogr. Distr. Middle eastern peninsula of Celebes.

Color. Adult Male. Crown, body, outer side of legs, hands, feet to above ankles, black; hind parts, and inner side of thighs to knees brownish white, (bright brown Meyer); sides of head and throat, bistre; inner sides of legs to ankles brownish black; tail above, black; callosities pinkish. Ex type Dresden Museum.

Measurements. Skull: total length, 142.3; occipito-nasal length, 123.1; zygomatic width, 100; intertemporal width, 50.2; Hensel, 90;

width of canines, alveolar border, 37.9; length of upper molar series, 36.3; length of mandible, 97; length of lower molar series, 47.3; length of upper canines, 29.8. Ex type Dresden Museum.

The type of this species is the one also figured by Meyer as *Macacus maurus* in the Abhandl. Berich. Königl. Zool. Anthol.-Ethnol. Mus. Dresden, 1897, p. 1, pl. I, adult. It is a full grown animal but whether it has assumed the pelage of the adult cannot be determined. Meyer decided afterwards it was not MAURUS, but a new species and renamed it TONKEANUS. It is without doubt the same as *Papio* (*Inuus*) *tonsus* Matschie, which is a much younger animal, and has not yet begun to show any white on the hinder parts.

The skull is that of a fully adult, but not an old animal, rather of one in its prime. It is the only adult specimen from this part of Celebes I have seen. Until we know more about the changes in color the pelage undergoes from youth to maturity, there is no alternative but to leave it under the name given by Dr. Meyer. It may only be a phase of pelage of M. OCHREATUS, and eventually these two may prove to be the same species.

GENUS SIMIA. THE BARBARY APE.

$$\text{I. } \frac{2-2}{2-2};\quad \text{C. } \frac{1-1}{1-1};\quad \text{P. } \frac{2-2}{2-2};\quad \text{M. } \frac{3-3}{3-3} = 32.$$

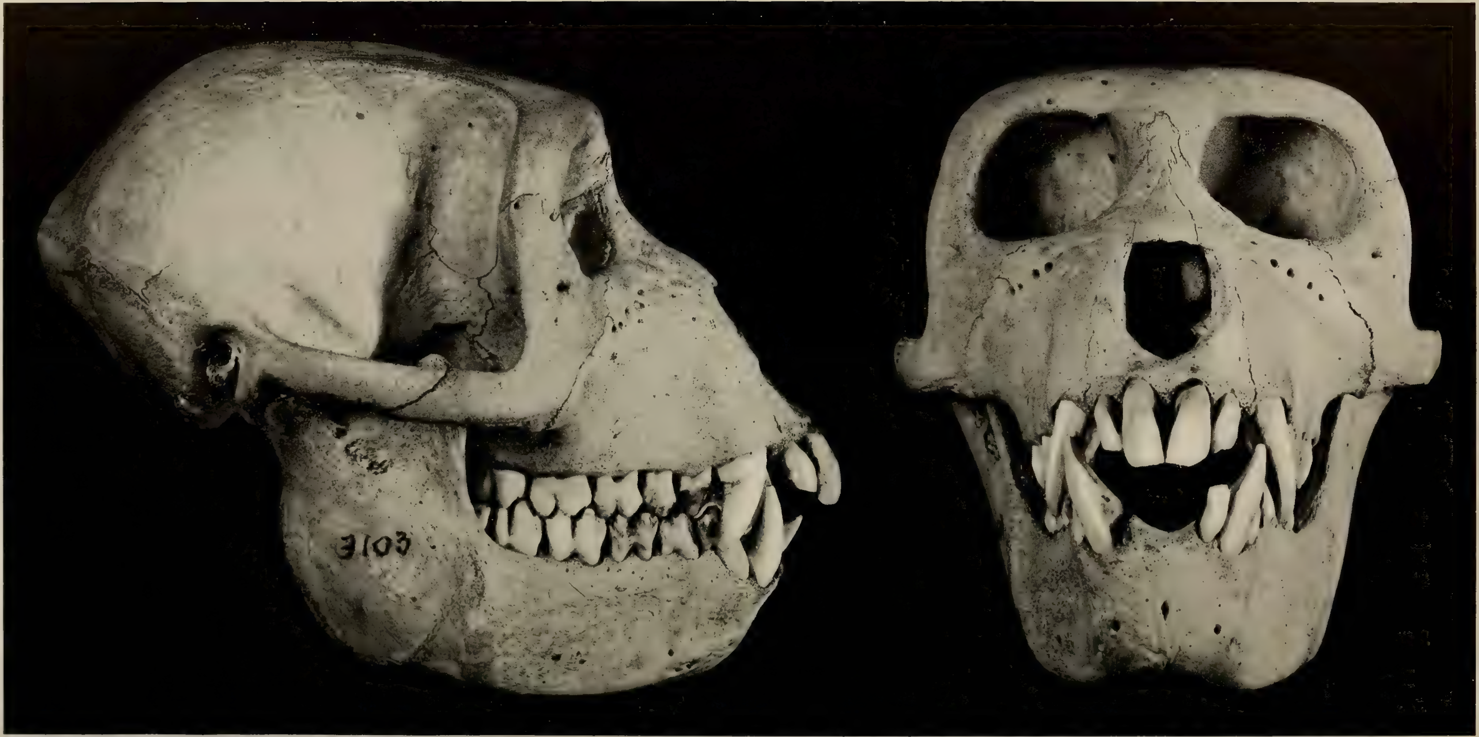
SIMIA Linn., Syst. Nat., I, 1758, p. 25. Type *Simia sylvanus* Linnæus.
Inuus E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 100.
Sylvanus Oken, Lehrb. Naturg., 3ter Theil, Zool., 2te Abth., 1816, p. 1223, (nec Latreille, 1807, Coleopt.).
Sylvanus Virey, Nouv. Dict. Hist. Nat., 2nd ed., XXXI, 1819, p. 275.
Pithes (?) Burnett, Quart. Journ. Scien. Lit. and Art, XXVI, 1828, p. 307.

Head oblong; face elongate, hairy; hair on head short; tail absent externally.

The genus Simia until a few years ago, has, since the time of Linnæus its proposer, been associated with the Ourang, and this too, in spite of the fact that Linnæus' *Simia satyrus* of the 10th edition of his Systema Naturæ, was a Chimpanzee, and not an Ourang. This was at length discovered by the Hon. Walter Rothschild, and published in a paper on the great Apes in the Proceedings of the Zoological Society of London in 1904.

But the Author of this paper in his selection of the type of *Simia* committed the error of choosing the *S. satyrus* Linn., instead of the next species, *S. sylvanus* the Barbary Ape, and this fact has been pointed out by Mr. Thomas in his paper on Linnæan types published in the same Journal for 1911.

The case is as follows: In many instances Linnæus when choosing a generic name selected for his term a specific name employed by some earlier writer, and this species, if determinable, would, in the majority of cases, become the type of the genus. Regarding this fact there would seem to be little or no divergence of opinion among Zoologists. Linnæus in the present instance selected Simia, (which he made to include all Primates), from the *"de Simia"* of Gesner, (Med. Tigur. Hist. Animal, 1551-58), which is the Barbary Ape, and this is the proper type for Simia, thus transferring the term from the great Apes to one similar to the Macaques. This procedure may be regretted by Mammalogists generally, for Simia has always been con-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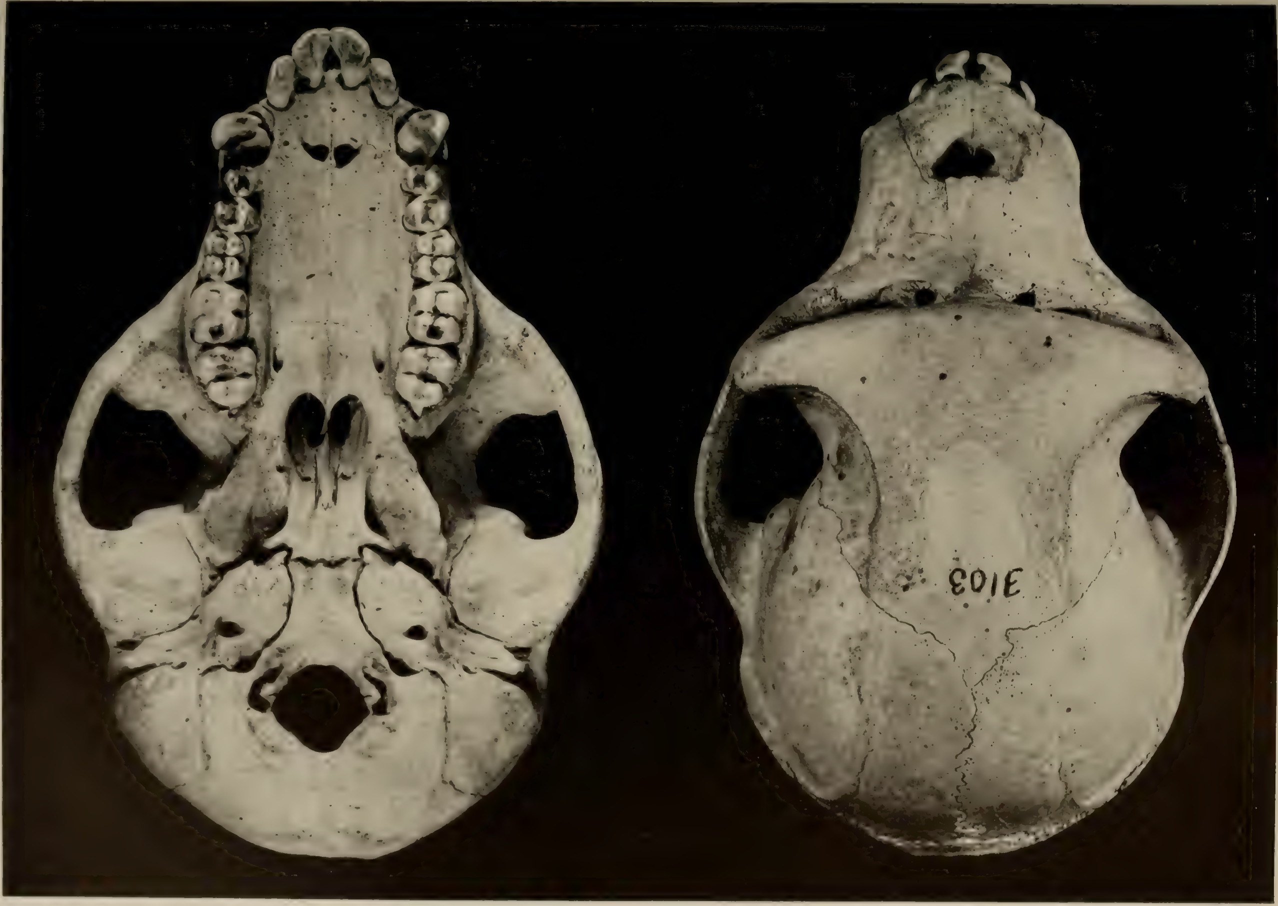

Simia sylvanus.

No. 3103 Acad. Nat. Sci. Phil. Coll. ⅘ Nat. Size.

nected with some group of the great Apes, but the reasons advanced for doing this were faulty, and an error was committed, and no matter how familiar this act may have become to Authors and others generally, yet it was still an error, and therefore something necessary to change and correct. No error can ever become the truth simply by toleration, and should never be continued when discovered for any reason, and particularly not for the totally insufficient one that a change would inconvenience the memories of some writers. It is to be hoped that SIMIA has at length found its true resting place for all time. Mr. Thomas in the same communication, p. 125, advocates that the Macaques should be included in SIMIA but in this view I cannot agree with him. If the Barbary Ape belongs to a distinct genus, it would naturally be on account of certain attributes possessed by it. Some of these are, the absence of a tail, the peculiar shape of the head, the oblong face, etc., none of which is to be found in any Macaque. The Barbary Ape alone represents the genus SIMIA, and the Macaques are only properly placed in the genus PITHECUS which antedates *Macaca* (sic), and all other genera proposed for them, and leaves no reason whatever for the employment of any other term.

SIMIA SYLVANUS Linnæus.

Simia sylvanus Linn., Syst. Nat., I, 1758, p. 25; Schreb., Säugth., I, 1755, p. 68, tab. IV; Gmel., Syst. Nat., I, 1788, p. 27; Shaw, Genl. Zool., I, Pt. I, 1800, p. 14, pl. VIII; Cuv., Règ. Anim., 1829, p. 96; Thos., Proc. Zool. Soc. Lond., 1911, pp. 121-125.

Simia inuus Linn., Syst. Nat., I, 1766, p. 35; Erxl., Syst. Reg. Anim., 1777, p. 13; Bodd., Elench. Anim., 1784, p. 55; Gmel., Syst. Natur., I, 1788, p. 28; Shaw, Genl. Zool., I, 1800, p. 13, pl. VII; Fisch., Syn. Mamm., 1829, p. 31.

Cynocephalus inuus Latr., Hist. Nat. Buffon, (Sonnini ed.), XXXVI, 1809, p. 293.

Inuus ecaudatus E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 100; Kuhl, Beitr. Zool., 1820, p. 15; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 59; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 32.

Le Magot F. Cuv., Hist. Nat. Mamm., Livr. IIme, 1819, p. 114, pl. XLI.

Macacus inuus Desm., Mamm., 1820, p. 67; E. Geoff., Cours Hist. Nat. Mamm., 1828, p. 23, 8me Leçon; E. Geoff., Bélang., Voy., 1834, p. 62; Forbes, Handb. Primates, II, 1894, p. 4.

Inuus pithecus Less., Spec. Mamm., 1840, p. 99; I. Geoff., Cat. Primates, 1851, p. 31.

Macacus sylvanus Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 115.

Pithecus inuus Reichenb., Vollständ. Naturg. Affen, 1862, pl. XXVIII, p. 143, fig. 409.

BARBARY APE.

Type locality. Africa.

Geogr. Distr. Morocco and Algeria, North Africa. Introduced on the Rock of Gibraltar in Europe.

Color. Top of head ochraceous, grading on back of neck between shoulders into buff yellow, the hairs tipped with black which in some places forms streaks; rest of upper parts streaked black and straw yellow; sides of head grayish white, with an irregular black line from eye to ear, caused by the tips of the hairs being massed together; shoulders like upper back, black and yellow; sides of body and limbs gray, some yellow mixed with the gray on the upper arms; hands blackish brown; feet grayish brown; tail rudimentary, ears and face flesh color.

Measurements. Skull: total length, 142.9; occipito-nasal length, 114.1; Hensel, 101.3; intertemporal width, 48.6; width of braincase, 69.3; median length of nasals, 18.9; palatal length, 58.7; length of upper molar series, 37.7; length of mandible, 103.1; length of lower molar series, 49.1. Ex specimen British Museum.

Linnæus in the Systema Naturæ, 10th edition, 1758, p. 25, named a monkey, which he stated came from Africa and Ceylon, SIMIA SYLVANUS, giving as the diagnosis of the species the following characters: "S. ecaudata, clunibus tuberoso-callosis," and for his first reference, *Gesn. quad.* 847. There is only one Macaque that can properly be said to be tailless, the Magot of the French writers from Morocco and Algeria in North Africa, and introduced on the Rock of Gibraltar. There are several species that have very short tails, but none of them could properly be described as "ecaudata." In Gesner's work, HISTORIA ANIMALIUM, on the page cited by Linnæus, is a figure of a Macaque without a tail, and as far as an uncolored drawing could, it answers sufficiently well for the Barbary Ape. Of course it is not found in Ceylon, but lapses in geography were not uncommon in the eighteenth century, as indeed they have not been in much later times, and the old Authors may not be held strictly accountable for the places and countries they give as the habitats of their species. Linnæus had no personal knowledge of this Macaque, and so we find that he describes it anew in his twelfth edition as *Simia inuus,* by which later name it has generally been called, retaining at the same time his previous one of

SYLVANUS, he doubtless supposing there were two tailless monkeys in Africa, as he does not cite 'Ceylon' for his *S. inuus*. In fact he distinguishes them from each other by giving SYLVANUS a "capite subrotundo," and *inuus* "capite oblongo," altogether too fine a distinction to apply to so closely allied tailless monkeys. As there seems to be no reason for doubting that SIMIA SYLVANUS was the North African Macaque, the long accepted name for the species, *inuus*, will have to give place to the prior claim of SYLVANUS and become its synonym.

GENUS PITHECUS. MACAQUES.

$$\text{I. }\frac{2-2}{2-2};\quad \text{C. }\frac{1-1}{1-1};\quad \text{P. }\frac{2-2}{2-2};\quad \text{M. }\frac{3-3}{3-3}=32.$$

PITHECUS E. Geoff., Mag. Encyclop., III, 1795, p. 462. Type **Simia sinica* Linnæus.

Macaca (sic), Lacépèd., Tabl. Mamm., 1799, p. 4.

Silenus Goldf., Handb. Zool., II, 1820, p. 479.

Maimon Wagn., Schreb., Säugth. Suppl., I, 1840, pp. 141, 148.

Rhesus Less., Rev. Zool., 1840, pp. 49, 95.

Pithex Hodg., Journ. Asiat. Soc. Beng., IX, 1840, pl. II, p. 1212.

Salamacis Glog., Handb. u. Hilfsb. Naturg., 1841, pp. XXVII, 35.

Lyssodes Gistel, Naturg. Theirreichs f. höhere Schulen, 1848, p. IX.

Cynamolgos Reichenb., Vollständ. Naturg. Affen, 1862, p. 130, pl. XXIII, figs. 237, 344.

Vetulus Reichenb., Vollständ. Naturg. Affen, 1862, pp. 125-130, pl. XXII, figs. 321, 326 d, (nec Rafin., Pisces, 1815).

Zati Reichenb., Vollständ. Naturg. Affen, 1862, pp. 130, 133, pl. XXIII, figs. 327, 331.

Body, heavy, compact; limbs short, stout; thumb pointing backward; nose long not extending beyond upper lip; nostrils opening downwards, and not placed at extreme end of nose; eyes approximate, surmounted by heavy bony ridges, ears naked, pointed; callosities large, buttocks nude; tail of various lengths, and tufted. Hair of head sometimes long or mane-like about face and extending downward on neck to shoulders; cheek pouches present. Skull has a small braincase, and prominent orbital ridges; canines long and formidable; first and second lower molars with four cusps; the last molar which is the largest, with five cusps and posterior talon.

LITERATURE OF THE SPECIES AND SUBSPECIES.

1758. *Linnæus, Systema Naturæ.*
Under the genus *Simia* the following species of *Pithecus* are given: (*S.*) SINICA first described; (*S.*) SYLVANUS first

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*The first four species given are *S. veter, S. silenus, S. faunus* and *S. cynomolgos,* all Linnæan and undeterminable except the last which is a Papio and = *Simia* HAMADRYAS Linn., leaving *S.* SINICA Linn., the fifth and last species, as the type of PITHECUS.

described; and (*S.*) *cynomolgos* = Papio hamadryas (Linn.); (*S.*) *apedia,* (*S.*) *faunus,* (*S.*) *silenus* and (*S.*) *syrichta* are undeterminable.

1766. *Linnæus, Systema Naturæ.*
Under *Simia* are the following species of Pithecus: (*S.*) nemestrinus first described; (*S.*) sylvanus; (*S.*) *inuus* = (*S.*) sylvanus; and (*S.*) *cynomolgos* = Papio hamadryas. (*S.*) *veter,* (*S.*) *silenus,* (*S.*) *apedia,* (*S.*) *syrichta* and (*S.*) *faunus,* all undeterminable.

1775. *Schreber, Die Säugthiere in Abbildungen nach der Natur mit Beschreibungen.*
In this work, also under Simia, the Author repeats the species given mostly by Linnæus, belonging to Pithecus: (*S.*) *inuus* = (*S.*) sylvanus; (*S.*) nemestrinus; (*S.*) *silenus* (nec Linn.), = P. albibarbatus (Kerr); (*S.*) sylvanus; (*S.*) *sinicus* (nec Linn.), = P. pileatus; (*S.*) *cynomolgos* Linn., = Papio hamadryas; (*S.*) *veter* and (*S.*) *faunus* undeterminable.

1777. *Erxleben, Systema Regni Animalis.*
The Macaques are placed by this Author in genera distinct from Pithecus. Papio containing (P.) nemestrinus; and *P. apedia* undeterminable. *Cercopithecus,* (Lasiopyga), has (*C.*) *sinicus,* being a mixture of sinicus Linn., and (*C.*) *cynomolgos* (Linn.), = Papio hamadryas (Linn.); and P. pileatus (Shaw). The undeterminable species are (*C.*) *veter,* (*C.*) *vetulus,* (*C.*) *silenus* and (*C.*) *faunus.*

1788. *Gmelin, Systema Naturæ.*
The list given by this Author is a mere repetition of that of Linnæus, 1766 edition.

1792. *Kerr, Animal Kingdom.*
The *Simia silenus* Auct., nec Linnæus, was named *Simia* (*Cercopithecus*) *veter albibarbatus,* and *Simia* (*Cercopithecus*) *silenus albibarbatus;* and Pithecus pileatus, named *Simia* (*Cercopithecus*) *sinicus pileatus* for the first time.

1793. *Shaw, Museum Leverianum.*
Pithecus albibarbatus (Kerr), described as *Simia ferox,* the Ouanderou of Buffon.

1800. *Shaw, General Zoology or Systematic Natural History.*
Pithecus albibarbatus (Kerr), described as *Simia leonina.*

1809. *Latreille, in Sonnini's edition of Buffon's Histoire Naturelle. Singes.*
Pithecus sinicus renamed *Cynocephalus sinensis* (!) The

other species given under *Cynocephalus* are: (*C.*) NEMESTRINUS; (*C.*) RHESUS; (*C.*) *inuus* = S. SYLVANUS; and *P. cynomolgos* (nec Linn.), = P. IRUS.

1812. *E. Geoffroy St. Hilaire, in Annales du Muséum d'Histoire Naturelle, Paris.*

Ten species are here recorded in the genera *Cercopithecus,* (LASIOPYGA), CERCOCEBUS, *Inuus* and PAPIO, six of which are valid. In *Cercopithecus,* (LASIOPYGA), is (*C.*) PILEATUS; and in CERCOCEBUS, are: (*C.*) *sinicus* (nec Linn.), = P. PILEATUS (Kerr); (*C.*) *radiatus* = P. SINICUS (Linn.); *C. cynomolgos* = PAPIO HAMADRYAS (Linn.); *C. atys* is undeterminable. *Inuus* has (*I.*) *ecaudatus* = *S.* SYLVANUS (Linn.); (*I.*) RHESUS; and (*I.*) NEMESTRINUS. PAPIO has *P. silenus* (Linn.), undeterminable.

1818. *F. Cuvier, Histoire Naturelle des Mammifères.*

Pithecus cynomolgos Auct., renamed *Macacus* IRUS.

1819. *F. Cuvier, Histoire Naturelle des Mammifères.*

PITHECUS RHESUS called *Macacus erythræus.*

1820. *Kuhl, Beiträge zur Zoologie.*

The following species of PITHECUS are recorded in this work in the genus *Cercopithecus,* (LASIOPYGA): (*C.*) PILEATUS; (*C.*) SINICUS; (*C.*) *radiatus* = P. SINICUS; (*C.*) *cynomolgos* (nec Linn.), = P. IRUS. *Inuus* contains (*I.*) *inuus* = S. SYLVANUS Linn.; P. RHESUS; and P. NEMESTRINUS. PAPIO has *P. silenus* (nec Linn.), = P. ALBIBARBATUS (Kerr).

1820. *Desmarest, Mammalogie ou Description des Espèces de Mammifères.*

The list of *Macaques* in this work does not vary from those previously given. The valid species of PITHECUS, included in the genus *Macacus* are: (*M.*) *silenus* (nec Linn.), = P. ALBIBARBATUS (Kerr); (*M.*) *sinicus* (nec Linn.), = P. PILEATUS (Kerr); (*M.*) RHESUS; (*M.*) NEMESTRINUS; (*M.*) *inuus* = S. SYLVANUS Linn.; *Macacus radiatus* = P. SINICUS; and *M. cynomolgos* (nec Linn.), = P. IRUS. In *Cercopithecus,* (LASIOPYGA), is (*C.*) PILEATUS (Kerr).

1822. *Sir S. Raffles, in Transactions of the Linnæan Society of London.*

PITHECUS FASCICULARIS first described as *Simia fascicularis;* and PITHECUS NEMESTRINUS renamed *Simia carpolegus.*

1825. *F. Cuvier, Histoire Naturelle des Mammifères.*
PITHECUS IRUS is renamed *Macacus carbonarius;* and a Macaque named from Duvaucel's drawing *Macacus* SPECIOSUS.

1829. *Fischer, Synopsis Mammalium.*
The following species of Macaques are given in this work under the genus *Simia:* (S.) PILEATA; (*S.*) SINICA; (*S.*) ***silenus*** = P. ALBIBARBATUS (Kerr); (*S.*) RHESUS; (*S.*) NEMESTRINUS; (*S.*) ***inuus*** = (S.) SYLVANUS; (*S.*) *cynomolgos* (nec Linn.), = P. IRUS F. Cuv.; (*S.*) *atys* Linn., (*S.*) *veter* Linn., and (*S.*) ***silenus*** Linn., are undeterminable. (*S.*) *carbonaria* F. Cuv., = P. IRUS; (*S.*) *radiata* Geoff., = *S. sinicus* Linn.; and (*S.*) SPECIOSA Cuv.

1829. *G. Cuvier, Règne Animal.*
Under *Simia* the following Macaques are recorded: (*S.*) SINICUS; (*S.*) *radiata* = P. SINICUS; (*S.*) *cynomolgos* (nec Linn.), = P. IRUS (F. Cuv.).

1833. *I. Geoffroy Saint-Hilaire, in Magasin de Zoologie.*
PITHECUS SPECIOSUS (F. Cuv.), redescribed as *Macacus arctoides.*

1834. *I. Geoffroy Saint-Hilaire, in Bélanger, Voyage aux Indes-Orientales.*
The following Macaques are in this work placed in the genus *Macacus: Les Cerocèbes ou Macaques à queue longue.* (*M.*) *radiatus* = PITHECUS SINICUS; (*M.*) SINICUS; (*M.*) *cynomolgos* (nec Linn.), = P. IRUS (Cuv.); (*M.*) *aureus* = P. IRUS; (*M.*) *silenus* (nec Linn.), = P. ALBIBARBATUS (Kerr); (*M.*) *erythræus* = P. RHESUS; (*M.*) NEMESTRINUS; (*M.*) *arctoides* = P. SPECIOSUS (Cuv.); (*M.*) *inuus* = (S.) SYLVANUS Linn.; (*M.*) *carbonarius* = P. IRUS; (M.) SPECIOSUS F. Cuv.; and *M. libidinosus* I. Geoff., = P. SPECIOSUS (F. Cuv.).

1839. *McClelland, in Proceedings of the Zoological Society of London.*
PITHECUS ASSAMENSIS first described as *Macacus assamensis.*

1839. *Ogilby, in Proceedings of the Zoological Society of London.*
PITHECUS SPECIOSUS redescribed as *Macacus* (*Pithex*) *oinops.*

1840. *Wagner, Schreber, Die Säugthiere in Abbildungen nach der Natur mit Beschreibungen. Supplementband.*
The species of PITHECUS are, in this work, placed in the genus *Inuus* as follows: (*I.*) *cynomolgos* (nec Linn.), = P. IRUS; (*I.*) *aureus* I. Geoff., = P. IRUS; (*I.*) *sinicus* (nec Linn.), = P. PILEATUS; (*I.*) *radiatus* = P. SINICUS; (*I.*) *silenus* (nec

Linn.), = P. ALBIBARBATUS; (*I.*) *erythræus* = P. RHESUS; (*I.*) NEMESTRINUS; (*I.*) *arctoides* = P. SPECIOSUS (F. Cuv.); and (*I.*) SPECIOSUS. The last species *I.* NIGER is a CYNOPITHECUS.

1840. *R. P. Lesson, Species des Mammifères Bimanes et Quadrumanes.*

The members of the genus PITHECUS are here included in *Macacus* with four subgenera, 1. *Cercocebus* with (*M.*) *radiatus* = P. IRUS; (*M.*) *carbonarius* = P. IRUS; 2. *Ouanderou* has (*M.*) *silenus* (nec Linn.), = P. ALBIBARBATUS; 3. *Maimon* contains (*M.*) RHESUS; (*M.*) NEMESTRINUS; (*M.*) *libidinosus* = P. SPECIOSUS (Cuv.); and (*M.*) MAURUS, probably belonging to the genus MAGUS; 4. *Inuus* with *I. pithecus* = SIMIA SYLVANUS Linn.

1840. *Hodgson, in Journal of the Asiatic Society of Bengal.*

PITHECUS ASSAMENSIS redescribed as *Macacus* (*Pithex*) *pelops.*

1841. *I. Geoffroy Saint-Hilaire, in Archives du Muséum d'Histoire Naturelle, Paris.*

P. PHILIPPINENSIS from the Island of Luzon first described from an albino individual.

1847. *Temminck, in Fauna Japonica, Mammalia.*

Pithecus speciosus (nec F. Cuv.), from Japan, described as *Inuus speciosus;* and the name being preoccupied by *Macacus speciosus* F. Cuvier, Blyth afterwards proposed the name FUSCATUS for the Japanese species.

1851. *I. Geoffroy Saint-Hilaire, Catalogue des Primates.*

In this Catalogue the Macaques are placed in the genera *Macacus* and *Inuus,* and ten species are recorded in the first, and one in the latter. Those under *Macacus* are: (*M.*) SINICUS; (*M.*) PILEATUS; (*M.*) *aureus* = P. IRUS; (*M.*) *cynomolgos* (nec Linn.), = P. IRUS; (*M.*) PHILIPPINENSIS described from an albino individual; (*M.*) *silenus* (nec Linn.), = P. ALBIBARBATUS (Kerr); (*M.*) *erythræus* = P. RHESUS; (*M.*) NEMESTRINUS; (*M.*) SPECIOSUS F. Cuv.; and *M. arctoides* = *P. speciosus* F. Cuv. The single species of *Inuus* is (*I.*) *pithecus* = SIMIA SYLVANUS Linn. Among the 'Additions,' PITHECUS PHILIPPINENSIS is redescribed as *Macacus palpebrosus,* ex Manila, from a fully colored individual.

1855. *Wagner, Schreber, Die Säugthiere Abbildungen nach der Natur mit Beschreibungen. Supplementband.*

As in the volume of 1840, the Macaques are here placed in the genera *Inuus* and *Cynocephalus.* The species are (*I.*)

cynomolgos (nec Linn.), = Pithecus irus (F. Cuv.); and with B. *Macacus carbonarius* F. Cuv., var.; and *M. aureus* I. Geoff., both equal P. irus (F. Cuv.); (*I.*) *palpebrosus* = P. philippinensis; and var. B. *Macacus* philippinensis; (*I.*) pileatus; (*I.*) sinicus; (*I.*) *erythræus* = P. rhesus; (*I.*) *pelops* = *P.* assamensis; (*I.*) nemestrinus; (*I.*) *arctoides* = P. speciosus (Cuv.,); (*I.*) speciosus (F. Cuv.); (*I.*) *ecaudatus* = *S.* sylvanus; (*I.*) *fusco-ater* = Magus ochreatus; and *Cynocephalus silenus* (nec Linn.), = Pithecus albibarbatus (Kerr).

1862. *Reichenbach, Die Vollständigste Naturgeschichte der Affen.* The Macaques are divided into various genera and subgenera, and considerable confusion is created by the introduction of species of totally different genera. Thus Pithecus has a subgenus *A. Vetulus* with the following species, *P. silenus* (nec Linn.), = P. albibarbatus (Kerr); and the four following all of which belong to Pygathrix: *nestor* = P. cephaloloptera; *ursinus* = P. johni; P. priam; and *thersites* = P. priam. *B. Cynamolgos,* with subgenus *Zati,* having (*C.*) sinicus; (*C.*) pileatus; (*C.*) *audebertii* = P. sinicus; and *C. aygula* which is a Pygathrix; (*C.*) cynocephalus is a Papio; (*C.*) philippinensis; *albinus* is an albino Pygathrix from Ceylon; (*C.*) *carbonarius* = P. irus; (*C.*) *mulatta* undeterminable; (*C.*) *palpebrosus* = P. philippinensis. *C. Macacus* has (*M.*) *erythræus* = P. rhesus; (*M.*) *geron* = P. rhesus?; (*M.*) rhesus; *M. brachyurus* an albino, species undeterminable; (*M.*) *speciosus* = P. fuscatus; (*M.*) *oinops* = P. rhesus; (*M.*) *pelops* = P. assamensis; (*M.*) *maurus* belongs to the genus Magus; (*M.*) *arctoides* = P. speciosus (F. Cuv.); (*M.*) *libidinosus* = P. speciosus (F. Cuv.); (*M.*) ochreatus is a Magus; and *Pithecus inuus* = S. sylvanus Linn.; *D. Nemestrinus,* has (*M.*) nemestrinus.

1862. *Swinhoe, in Proceedings of the Zoological Society of London.* Pithecus cyclopsis first described as *Macacus cyclopsis.*

1863. *Blyth, Catalogue of Mammals in the Museum of the Asiatic Society of Bengal.*
Pithecus leoninus first described, name preoccupied by *Simia leonina* Shaw, a Pithecus.

1866. *Swinhoe, in Proceedings of the Zoological Society of London.* P. sancti-johannis first described.

1867. *Slack, in Proceedings of the Academy of Natural Sciences of Philadelphia.*
PITHECUS IRUS redescribed as *Macacus fur.*

1868. *J. E. Gray, in Proceedings of the Zoological Society of London.*
PITHECUS LASIOTIS first described as *Macacus lasiotis.*

1869. *Bartlett, in Land and Water.*
Pithecus leoninus Blyth, redescribed as *Macacus* ANDAMANENSIS, but the name stands, as *leoninus* Blyth was preoccupied.

1870. *J. E. Gray, Catalogue of Monkeys, Lemurs and Fruit-eating Bats, in the Collection of the British Museum.*
In this list the Macaques are placed in three genera: *Macacus, Silenus,* and *Inuus;* the first with eleven species, two varieties; and five species referred to, but not known to the Author. The other genera have one species each. The species and varieties of *Macacus* are: (*M.*) SINICUS; (*M.*) PILEATUS; (*M.*) NEMESTRINUS; (*M.*) *melanotus* (!) = PITHECUS SPECIOSUS (Cuv.); (*M.*) *pelops* = P. ASSAMENSIS; (*M.*) *cristatus* = P. PHILIPPINENSIS; (*M.*) *cynomolgos* (nec Linn.), = P. IRUS; (*M.*) *cynomolgos* var. *cummingii* = P. PHILIPPINENSIS; (*M.*) ASSAMENSIS; (*M.*) *aureus* = P. IRUS; (*M.*) *palpebrosus* = P. PHILIPPINENSIS; (*M.*) RHESUS; (*M.*) CYCLOPSIS; (*M.*) *speciosus* (nec F. Cuv.), = P. FUSCATUS Blyth; (*M.*) MAURUS, and (*M.*) OCHREATUS both of the genus MAGUS, from Celebes. *Silenus* has (*S.*) *veter,* (thus taking for his genus and species two names of Linnæus belonging to undeterminable animals), but Gray's *veter* is not that of Linnæus, and = P. ALBIBARBATUS (Kerr), and *Inuus* has *I. ecaudatus* = SIMIA SYLVANUS Linn.

1870. *A. Milne-Edwards, in Comptes Rendus.*
P. THIBETANUS first described as *Macacus thibetanus.*

1872. *Anderson, in Proceedings of the Zoological Society of London.*
P. RUFESCENS first described as *Macacus rufescens.*

1872. *H. et A. Milne-Edwards, Recherches pour servir à l'Histoire Naturelle des Mammifères, comprenant des considérations sur la classification de ces animaux.*
PITHECUS LASIOTIS redescribed as *Macacus tcheliensis.*

1872. *P. L. Sclater, in Proceedings of the Zoological Society of London.*
PITHECUS ASSAMENSIS redescribed as *Macacus rheso-similis.*

1875. *Blyth, in Journal of the Asiatic Society of Bengal.*
Pithecus speciosus Temm., (nec F. Cuv.), renamed *Macacus* FUSCATUS.

1875. *P. L. Sclater, in Proceedings of the Zoological Society of London.*
P. FUSCATUS Blyth, figured as *Macacus speciosus* (nec F. Cuvier).

1876. *Schlegel, Muséum d'Histoire Naturelle des Pays-Bas, Simiæ.*
In this work the species of PITHECUS are placed in two genera, CERCOCEBUS and *Macacus*. In the first are: (*C.*) *cynomolgos* (nec Linn.), = P. IRUS F. Cuvier; (*C.*) PILEATUS and (*C.*) SINICUS. In the last are (*M.*) *silenus* (nec Linn.), = P. ALBIBARBATUS (Kerr); (*M.*) NEMESTRINUS; (*M.*) *erythæus* = P. RHESUS; (*M.*) SPECIOSUS F. Cuv.; and (*M.*) *arctoides* = P. SPECIOSUS F. Cuv. In the text is mentioned as distinct, (*M.*) THIBETANUM Milne-Ed., and as varieties, in the text of (*M.*) *erythræus* = P. RHESUS are given: (*M.*) ASSAMENSIS; (*M.*) *rheso-similis* which he considers apud Blyth = (*M.*) ASSAMENSIS; (*M.*) SANCTI-JOHANNIS; (*M.*) LASIOTIS; (*M.*) *tcheliensis* = (*M.*) LASIOTIS; and (*M.*) CYCLOPSIS. (No specimens of these last six forms are in the Leyden Museum and the Author's opinion is based upon the published descriptions, and their describers' statements); (*M.*) SPECIOSUS F. Cuv.; and *S.* SYLVANUS Linn. (*M.*) NIGER belongs to CYNOPITHECUS, and (*M.*) OCHREATUS to MAGUS.

1878. *Anderson, Anatomical and Zoological Researches, comprising an account of the Zoological Results of the two Expeditions to Western Yunnan.*
Seventeen species of PITHECUS are here recorded, two of which have of late been placed in the genus MAGUS. The species given, all under the genus *Macacus,* are: (*M.*) *arctoides* = P. SPECIOSUS (Cuv.); (*M.*) *leoninus* Blyth (nec Shaw), = P. ANDAMANENSIS Bartl.; (*M.*) RHESUS; (*M.*) ASSAMENSIS; (*M.*) *cynomolgos* (nec Linn.), = P. IRUS (F. Cuv.); (*M.*) NEMESTRINUS; (*M.*) FUSCATUS; (*M.*) THIBETANUM; (*M.*) RUFESCENS; (*M.*) LASIOTIS; (*M.*) SANCTI-JOHANNIS; (*M.*) CYCLOPSIS; (*M.*) SINICUS; (*M.*) PILEATUS; (*M.*) *silenus* (nec Linn.), = P. ALBIBARBATUS (Kerr). (M.) MAURUS and (*M.*) OCHREATUS have been placed in the genus MAGUS. The Author fully discusses their values and the relationship of the species reviewed, and of the examples that have served as types both for the recognized species and for those that are included in the synonymy, and his views are given at considerable length. The synonymy is copious and on the whole very correct, and the

general conclusions reached by the Author are but little at variance with the opinions held by Mammalogists, regarding these Monkeys, at the present time. In a footnote to the article on *Macacus* OCHREATUS he gives the synonymy and description of the two forms of CYNOPITHECUS then known as C. NIGER and *C. nigrescens* = C. NIGER.

1887. *W. T. Blanford, in Proceedings of the Zoological Society of London.*
In some critical notes on the nomenclature of Indian Mammals the writer discusses the names that should properly belong to *Simia silenus* Linn., and *Simia cynomolgos* Linn., and endeavors to prove, first, that the animals to which these names were applied are undeterminable, and that Linnæus' names must be dropped from our list. The Macaque which is called *silenus* Auct., was first designated *Simia* ALBIBARBATUS by Kerr, and by that name it must be known in the future; but *Simia cynomolgos* Linn., = *Simia* HAMADRYAS Linn., and becomes its synonym.

1888-91. *Blanford, The Fauna of British India including Ceylon and Burma. Mammalia.*
The Macaques, inhabiting the regions of whose fauna this work treats, are included in the genus *Macacus*. Nine species are recognized as follows: (*M.*) RHESUS; (*M.*) ASSAMENSIS; (*M.*) *silenus* (nec Linn.), = P. ALBIBARBATUS (Kerr); (*M.*) *arctoides* = P. SPECIOSUS (Cuv.); (*M.*) *leoninus* = P. ANDAMANENSIS Bartl.; (*M.*) NEMESTRINUS; (*M.*) *cynomolgos* (nec Linn.), = P. IRUS (F. Cuv.); (*M.*) SINICUS; and (*M.*) PILEATUS; all valid. The geographical distribution and description of the habits of these Monkeys are given.

1892. *A. Milne-Edwards, in Revue Générale des Sciences, (note).*
PITHECUS VESTITUS first described as *Macacus vestitus.*

1894. *True, in Proceedings of the United States National Museum.*
PITHECUS VILLOSUS first described as *Macacus rhesus villosus.*

1897. *Trouessart, in Le Naturaliste.*
PITHECUS HARMANDI, a MS. name of A. Milne-Edwards in Paris Museum, described by Trouessart as *Macacus harmandi.*

1903. *G. S. Miller Jr., in Smithsonian Miscellaneous Collections.*
PITHECUS PHÆURUS, and P. PAGENSIS first described in the genus *Macacus.*

1905. *E. A. Mearns, in Proceedings of the United States National Museum.*

Pithecus mindanensis = P. PHILIPPINENSIS; *P. p. apoensis;* P. SULENSIS; and P. CAGAYANUS first described and placed in the genus *Cynamolgos* Reichenbach.

1906. *G. S. Miller Jr., in Proceedings of the United States National Museum.*
P. ADUSTUS; *P. brocus* = P. NEMESTRINUS; and P. INSULANUS all first described under the genus *Macaca*!

1909. *Thomas and Wroughton, in Annals and Magazine of Natural History.*
P. MORDAX and P. RESIMUS from Java described as *Macaca*! *mordax* and *Macaca*! *resimus.*

1909. *D. G. Elliot, in Annals and Magazine of Natural History.*
P. LITTORALIS; P. BRACHYURUS (BREVICAUDUS); P. VALIDUS; P. ALACER; P. KARIMONI; P. LÆTUS; P. DOLLMANI; and P. BINTANGENSIS first described.

1910. *D. G. Elliot, in Proceedings of the United States National Museum.*
In this paper the following species are described for the first time, from localities in Lower Siam, and islands in the Eastern Archipelago: P. LAPSUS; P. AGNATUS; P. LINGUNGENSIS; P. LAUTENSIS; P. SIRHASSENENSIS; P. VITIIS; P. CARIMATÆ; P. MANDIBULARIS; P. BAWEANUS; P. CUPIDUS; P. LINGÆ; P. IMPUDENS; and P. CAPITALIS.

GEOGRAPHICAL DISTRIBUTION OF THE SPECIES.

The Macaques are distributed throughout India, and as far north as Cashmere and Thibet, and south to the Island of Ceylon; also on the east of the Bay of Bengal, in Upper and Lower Burma, Siam, Cochin China, and Malay Peninsula; the Mergui Archipelago, (introduced into the Andaman Islands), Island of Singapore, Rhio Archipelago, Sumatra and the islands on its east and west coast, Java, Flores, and Lombock, and islands of the Javan Sea; Borneo, and islands off its west and south coast; islands in South China Sea; in the Anamba and Natuna groups, Philippine Archipelago; Hainan, China, Formosa, the Sulu Archipelago, and Japan. This genus is not represented in Africa, the species indigenous to Morocco and Algeria once considered to belong to it, S. SYLVESTRIS, is now the sole member of the genus SIMIA.

It will thus be seen that the members of PITHECUS are dispersed over a very wide area, and, as is to be expected, the island forms differ very considerably from each other. If they were dwellers on the mainland they would be regarded in many instances as geographical races, but now, on account of their insulated habitats may be considered as specifically distinct, subjected as they are to a different environment, and deprived of all opportunities for contact with near allies. India proper, the nearest abode of the Macaques, considering its size, has comparatively few species. The most common is P. RHESUS dispersed over the northern portion from the Godaveri River to the Himalayas, having been introduced on Jako Hill, Simla. It is found in Nepaul, on the west coast near Bombay, in Guzerat, the Central Provinces, Bengal and Northern Circars. In the southern portion from the west coast near Bombay, and on the east, not north of the Godaveri River, thence to Cape Comorin, P. SINICUS is found; and in the southern part from the Western Ghats at about 14° N. Lat. to Cape Comorin, P. ALBIBARBATUS ranges. In Ceylon, only one species of Pithecus is met with, P. PILEATUS, distributed throughout the island. In the Himalaya range as far west as Masuri, from the base of the hills to a considerable elevation, in the Sundabuns, east of Calcutta, also in Sikkim, Bhutan, Assam, Mishmi Hills, and Upper Burma as far as Bhamo on the Irawady, P. RHESUS is replaced by P. ASSAMENSIS, and this species may also penetrate the Laos country, Upper Siam. P. SPECIOSUS has a wide range, and occurs in Upper Assam, Upper Burma, (Cachar), Kakhyen Hills on frontier of Yunnan, (not found in the Irawady Valley), Cochin China, and Borneo. The Pig-tailed Macaque, P. NEMESTRINUS is found in Southern Burma, (Malewun and Bankasun, Davison), Tenasserim, Malay Peninsula, Sumatra, Banka, Java, and Borneo. P. IRUS ranges from Burma, Arakan, and Tenasserim, possibly into the Malay Peninsula. Upper Burma in the Valley of the Irawady, and Arakan contain one more species, P. ANDAMANENSIS, which has also been introduced into the Andaman Islands. It may possibly go into Siam. Tenasserim also has two more species P. RUFESCENS obtained at Victoria Point, and P. ADUSTUS at Champang. In Lower Siam P. CAPITALIS has been procured, and P. FASCICULARIS is found on the Islands Terutau and Lankawi in the Straits of Malacca, and in Sumatra. In the Mergui Archipelago, west of Tenasserim, P. INSULANUS has been procured on Chance Island, and P. VITIIS on Domel, St. Matthew and Sullivan Islands; and in the Nicobar group, on the Great and Little Nicobar, and Katchal Islands P. UMBROSUS is found. In the islands off the west coast of Sumatra, on Simalur and Lasia Islands P. FUSCUS was obtained. On Nias Island at Siaba Bay, P. PHÆURUS occurs; and on Tuang Ku of the Banyak Islands P. AGNATUS was taken. Off the east coast of Sumatra on

Banka and Billiton Islands P. LAPSUS is found, and in the great Island of Java, at Tjilaljap P. MORDAX, and at Tasikmalaja P. RESIMUS were met with, but their ranges are unknown. In the Javan Sea on the Island of Bawean P. BAWEANUS was discovered, and on Mata Siri about forty miles from Pulo Laut off the south east coast of Borneo, P. CUPIDUS was procured; and off east coast of Sumatra on South Pagi Island, P. PAGENSIS was obtained. In the Rhio Archipelago on Linga Island, P. LINGÆ was found. P. IMPUDENS is a resident of the small island of Sugi, and P. ALACER came from Bliah, on the northern point of Koendoer Island. At Monos, on the eastern coast of Karimon Island, P. KARIMONI was taken, and on the islands of Bintang and Batam P. BINTANGENSIS occurs. On Singapore Island P. DOLLMANI was met with; and on the islands of Siantan and Jimaja of the Anamba Group, and also on Bunoa, Big Tamberlan, and Wai, of the Tamberlan Islands, P. PUMILUS was taken. In Borneo, one more species P. MANDIBULARIS is found near Pontianak, its range unknown; and in the Natuna Group north of Borneo, on Laut Island, P. LAUTENSIS was discovered; and from Lingung Island P. LINGUNGENSIS came; and in the south on Sirhassen Island P. SIRHASSENENSIS occurs. In the Carimata Group on Carimata Island, P. CARIMATÆ was procured. In the South China Sea, south east coast of Malay Peninsula, on Tingi and Tunan Islands, P. LÆTUS occurs. Passing now for a moment to the mainland between Cambogia and Siam, we meet with P. HARMANDI in the mountains, its range however quite unknown. On the Island of Hainan P. BREVICAUDUS was obtained. On North Lena Island near Hong Kong P. SANCTI-JOHANNIS was found, and on Formosa P. CYCLOPSIS occurs. The Philippine Archipelago has two species, P. PHILIPPINENSIS ranging over the larger islands from Luzon to Mindanao, and on the latter is a somewhat doubtful form *P. p. apoensis* from Mt. Apo. In the Sulu Sea from Cagayan Island P. CAGAYANUS was procured and a form *P. suluensis,* (skull only described), from the Island of Sulu, not yet definitely established. China contains several large species of PITHECUS, and from Kuatun, in the province of Fu Kien on the coast opposite the Island of Formosa, P. LITTORALIS came, its range however unknown. In the Province of Setchuen two species are found, P. VESTITUS, a dweller of the mountains, and which extends its range to Tengri-Nor in Batang, Thibet, and P. LASIOTIS, this last species going to the Dupleix Mountains up to an elevation of 13,000 feet, in the Province of Tché-li. Thibet has one other species, P. THIBETANUM from the mountains of Moupin, its range however not yet known. At Lolab, Cashmere, is P. VILLOSUS, its range unknown. One species only remains to be mentioned, P. FUSCATUS from Japan, which is found in the Islands of Yakushima and Nippon to 14° North Latitude, and common on the hills about Kyoto.

KEY TO THE SPECIES.

A. Tail nearly rudimentary 1½-3½ inches in length.
  a. Color dark brown or blackish above............*P. speciosus.*
  b. Color dark reddish chocolate..................*P. harmandi.*
  c. Color red or golden red.......................*P. rufescens.*
  d. Color dark brown, hairs banded with yellow and black ....*P. fuscatus.*
B. Tail over 3½ and under 8 inches in length.
  a. Color blackish brown tinged with chestnut.....*P. thibetanum.*
  b. Color dark gray, hairs tipped with yellowish brown ....*P. vestitus.*
  c. Color buff grading to brick dust red on rump ....*P. sancti-johannis.*
  d. Color dark orange...........................*P. lasiotis.*
  e. Color bistre ....*P. pagensis.*
C. Tail 8 inches in length but not over 12 inches.
  a. Color tawny ochraceous and black...............*P. villosus.*
  b. Color tawny olive and black grading into russet ...*P. littoralis.*
  c. Color olive tinged with brown..................*P. cyclopsis.*
  d. Color uniform black above to rump..........*P. nemestrinus.*
  e. Color, upper back bright russet, lower back light ochraceous buff.
    a.' Large, tail 230 mm. ....*P. adustus.*
    b.' Small, tail 183 mm. ....*P. insulanus.*
  f. Color reddish brown, crown mummy brown.*P. andamanensis.*
  g. Color brown washed with yellowish..........*P. assamensis.*
  h. Color bistre with grayish tinge, and buff speckled, grading to orange on lower back ....*P. rhesus.*
  i. Color speckled black and russet, rump dark orange rufous ....*P. brevicaudus.*
D. Tail over 12 inches but not as long as head and body.
  a. With beard and ruff around the face ......*P. albibarbatus.*
  b. Without beard or ruff.
    a.' Hairs on head radiating from a central point.

a.″ Color dark brown and buff in bands, giving a reddish brown hue.....*P. sinicus.*
b.″ Color dark reddish brown ....*P. pileatus.*
b.′ Hairs on head not radiating from a central point.
a.″ Color isabella speckled with buff.......*P. resimus.*
b.″ Color Prout's brown washed with olive and speckled with buff..........*P. validus.*
c.″ Color hazel with black and tawny annulations ....*P. alacer.*
d.″ Color tawny ochraceous, hairs purplish gray and banded with tawny ochraceous and black........*P. karimoni.*
e.″ Color blackish brown, hairs banded with wood brown............*P. fuscus.*

E. Tail as long as, or exceeding the head and body.
a. Hands black and buff, color blackish, hairs with subterminal cream buff ring...........*P. umbrosus.*
b. Hands brownish black; color grayish olive banded with cream buff ....*P. irus.*
c. Hands gray; color reddish brown, speckled with golden buff and blackish brown ....*P. mordax.*
d. Hands olive gray, color tawny umber; ascending ramus of mandible broad and low ....*P. fascicularis.*
e. Hands gray, yellow speckled; color ochraceous buff; ascending ramus of mandible narrow and high ....*P. mandibularis.*
f. Hands and feet gray, color yellowish brown; skull and teeth large ....*P. capitalis.*
g. Hands grayish cream; color wood brown tinged with red ....*P. lætus.*
h. Hands gray and cream buff; color tawny and black ....*P. lingungensis.*
i. Hands bluish gray and cream buff; color tawny ochraceous and brownish black........*P. lautensis.*
j. Hands pale gray and cream buff; color blackish brown and ochraceous.........*P. sirhassenensis.*
k. Hands yellowish gray; color wood brown banded with black and yellow ....*P. vitiis.*

l. Hands dark gray and whitish; color mottled blackish brown and buff washed with gray ....*P. carimatæ.*

m. Hands bluish gray annulated with cream buff and black; color dark buff yellow and black ....*P. baweanus.*

n. Hands yellowish; color ochraceous buff and black ....*P. cupidus.*

o. Hands and feet smoke gray...................*P. agnatus.*

p. Hands dark brown; color tawny ochraceous and black.

  a.′ Feet dark brown ....*P. phæura.*

  b.′ Feet yellowish gray ....*P. lapsus.*

q. Hands dark brown washed with buff; color rusty ....*P. lingæ.*

r. Hands dark brownish gray and buff; color ochraceous and black ....*P. impudens.*

s. Hands iron gray speckled with buff, color burnt umber and black.

  a.′ Width of rostrum equal to the length; tooth rows straight ....*P. bintangensis.*

  b.′ Width of rostrum greater than length; tooth rows curved, longer ....*P. dollmani.*

t. Hands tawny olive; color raw umber and black ....*P. philippinensis.*

u. Hands olive gray; color yellowish olive and black ....*P. p. apoensis.*

v. Hands drab gray, color olive brown? (alcoholic specimen) ....*P. cagayanus.*

w. Hands ochraceous buff and black; color ochraceous rufous and black ....*P. pumillus.*

x. Hands and color? Skull alone known ....*P. suluensis.*

Subgenus Inuus.

Tail short, thick, hair rather long.

PITHECUS SPECIOSUS (F. Cuvier).

Macacus speciosus F. Cuv., Hist. Nat. Mamm., 1825, pl. XLVII; Fisch., Syn. Mamm., 1829, p. 30; I. Geoff., Bélang., Voy., 1834, p. 6.

Macacus arctoides I. Geoff., Mag. Zool., 1833, p. 6, pl. II; *Id.* Voy. Bélang., Zool., 1834, p. 61; *Id.* Archiv. Mus. Hist. Nat., Paris, II, 1843, p. 575, (Part.); *Id.* Cat. Primates, 1851, p. 31; Reichenb., Vollständ. Naturg. Affen, 1862, p. 142, pl. XXIV, fig. 371; Anders., Exped. Yunnan, Zool., 1878, p. 45, pls. I, II; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 116; Blanf., Faun. Brit. Ind., Mamm., 1891, p. 17; Forbes, Handb. Primates, II, 1894, p. 8, (Part.); Flow., Proc. Zool. Soc. Lond., 1900, p. 315.

Papio melanotus (!) Ogilby, Proc. Zool. Soc. Lond., 1839, p. 31.

Pithecus arctoides Blainv., Ostéogr., Mamm., I, 1839, p. 64, Atl., pl. VII.

Inuus arctoides Wagn., Schreb., Säugth. Suppl., I, 1840, p. 146; V, 1855, p. 57.

Pithecus (*Macacus*) *arctoides* Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 116, 118.

Macacus melanotus (!) Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 29.

Macacus brunneus Anders., Proc. Zool. Soc. Lond., 1871, p. 628; 1872, p. 203, pl. XII, juv.; 1874, p. 652; Sclat., Proc. Zool. Soc. Lond., 1875, p. 332.

Inuus speciosus Blyth, Journ. Asiat. Soc. Beng., XLIV, 1875, ext. no. p. 6.

BROWN MACAQUE.

Type locality. Unknown. Species established on a drawing by Duvaucel.

Geogr. Distr. Upper Burma, (Cachar); Upper Assam; Kakhyen Hills on frontier of Yunnan; not found in Irawady Valley, (Anderson); Cochin China; Borneo.

Genl. Char. Tail nearly obsolete. No black cap on head; face red.

Color. General color of head, body and limbs dark reddish brown, the hairs ringed with black and pale yellow; under parts yellowish white; hands and feet dark reddish brown. Face red. Ex type of *M. arctoides* I. Geoff., in Paris Museum.

Measurements. Skull: total length, 149; occipito-nasal length, 126; Hensel, 101; intertemporal width, 46; palatal length, 60; width of braincase, 70; median length of nasals, 26; length of upper molar series, 39; length of mandible, 99; length of lower molar series, 49.

F. Cuvier (l. c.) described and figured a Macaque with a very short tail, founded upon a drawing of Duvaucel and called it SPECIosus, and this name has since been applied to both the Macaque of Japan and the Indian Macaque afterwards named *arctoides* by I. Geoffroy. There are but three very short tailed Macaques to which Cuvier's name could, probably, have been applied: the Japanese species; the *arctoides* Geoff.; and the NEMESTRINUS Linn. The latter with its black cap can be at once removed as answering neither Cuvier's figure nor description; and it would not be at all likely, though possible, that, at the time Cuvier published his description, a specimen of a Macaque from Japan would come into his possession, as Japan was closed to the world at that date, and the exportation of specimens of Natural History would be most improbable. Cuvier does not state where Duvaucel saw the animal he drew, and we have no information on that point. However, both description and figure fairly represent the animal from Burma and Cochin China, etc. and the latter does not exhibit the long loose fur of the Japanese Macaque, but shows the short more compact fur of the better known species. The evidence, therefore, would seem to show that Cuvier's species is the Macaque afterwards described by I. Geoffroy, and not the one from Japan.

Anderson in Proc. Zool. Soc. Lond., 1874, p. 652, states that he compared a specimen of his *M. brunneus* with Geoffroy's type of *M. arctoides* in the Paris Museum, and that these are not the same, but does not indicate in what the difference exists. He farther remarks that *M. brunneus* is more closely allied to M. SPECIOSUS of Japan than it is to *M. arctoides.* In the volume for the year 1876, p. 332, however, according to Sclater, he retracts his previous opinion and now considers *M. brunneus* and *M. arctoides* the same. A specimen in the British Museum from the Zoological Society has no tail, and small callosities, and resembles very much Gray's *melanotus* (!). It is a young individual with the last molar in both jaws not having yet appeared, the upper canines still represented by the milk teeth, and only the points of the lower canines visible in the mandible. In color it is dark brown or chestnut with the dorsal region quite black. The hairs on head, flanks and arms are but faintly annulated. There is no tail at all, and there is a crest of hair on back of head, and the callosities are small and shaped something like a parallelogram; so that the skin resembles very much a young CYNOPITHECUS, but the skull has not the broad rostrum of the members of that genus, and is that of a young macaque, so if there has been no mistake, and the skull really belongs to the specimen, the example must be referred to PITHECUS, otherwise I should consider it a CYNOPITHECUS NIGER juv. The specimen was presented by the

Zoological Society, and is stated to have come from Madras, from which port the animal was probably shipped to London, but the locality in which it was procured is not known.

PITHECUS HARMANDI (Trouessart).

Macacus harmandi A. Milne-Ed., MS. Paris Museum; Trouess., Le Natural., 1897, p. 10, desc.; *Id.* Cat. Mamm. Vivant quam Fossil., 1898-99, p. 29, (desc. footnote).

Type locality. Mountains between Cambogia and Siam. Type in Paris Museum.

Geogr. Distr. Known from type locality only.

Genl. Char. Size moderate, body thick-set, limbs rather long, tail a button. Hairs radiating from middle of forehead.

Color. Male. Head, rump, limbs, hands and feet, hairs uniformly colored not annulated, glossy reddish chocolate brown; back, shoulders, arms to elbows and sides black; under parts reddish brown. Ex type Paris Museum.

Measurements. Skull: total length, 145; occipito-nasal length, 121; intertemporal width, 47; Hensel, 98; breadth of braincase, 70; zygomatic width, 96; palatal length, 62; median length of nasals, 25; length of upper molar series, 40; length of mandible, 94; length of lower molar series, 50. Ex type Paris Museum.

This is another small thick-set baboon of a general dark reddish chocolate color, black on forepart of back and on shoulders. The middle of the forehead is nearly bare and forms a kind of raised lump, not seen on skull, from the sides of which the hairs radiate to the sides and back of head, but not to the front. There is a sparse chocolate colored beard on the chin. Possibly a melanistic individual of P. SPECIOSUS. The type is a young animal, though probably fully grown.

PITHECUS RUFESCENS Anderson.

Macacus rufescens Anders., Proc. Zool. Soc. Lond., 1872, p. 204, Juv.; *Id.* Zool. Exped. Yunnan, 1878, p. 79; Sclat., Proc. Zool. Soc. Lond., 1872, p. 495, pl. XXIV; 1873, p. 83; Forbes, Handb. Primates, II, 1894, p. 11; Flower, Proc. Zool. Soc. Lond., 1900, p. 315; Bonhote, Proc. Zool. Soc. Lond., 1900, p. 871, desc.

Macacus arctoides Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 116, (Part.).

RUFOUS SHORT-TAILED MACAQUE.

Type locality. Unknown. Type in British Museum.

Geogr. Distr. Tenasserim; range unknown.

Genl. Char. Hairs on top of head radiating from a central point, tail rudimentary, merely a stump, molar teeth very large.

Color. Head and upper parts banded with golden red and tipped with black, giving this part a reddish hazel appearance; sides of body and outer sides of limbs bright red, which may be described as a bright cinnamon, the legs being reddest; hands brownish, darker than forearms, hairs banded with ochraceous and black; feet reddish brown darker than legs; under parts and inner side of limbs paler. Ex type British Museum.

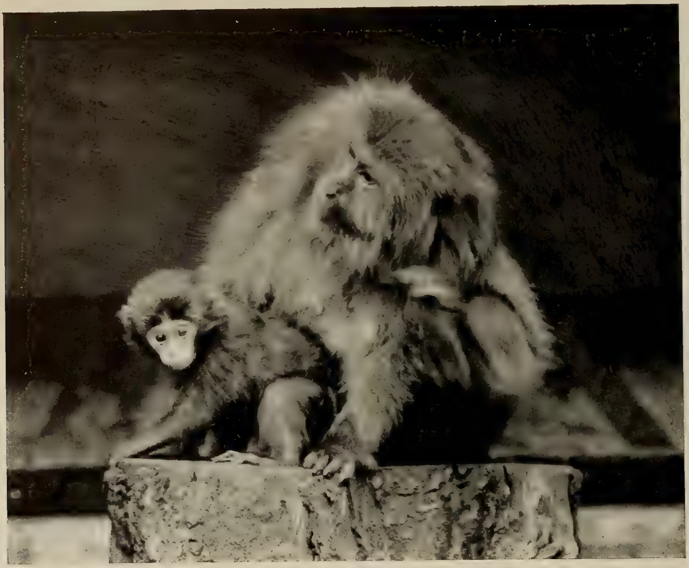
Anderson describes this specimen in Zool. Exped. Yunnan, as brick red, but it is much too dark for that color, and is more near a rather bright golden cinnamon, darkest on upper parts where the black tips of the hairs are in evidence. The hairs on sides of body and limbs are unicolor without black tips, which produces the brighter hue presented by them. The animal is very small, about two thirds the size of P. SPECIOSUS F. Cuv., probably only half grown as the skull shows it to be quite young. The molar teeth are very large, unusually so considering the age of the individual, the second molar exceeding in size any in the adult skulls of other species.

Measurements. Total length, 490; tail, 30; hind foot, 38, (skin). Skull: occipito-nasal length, 90.7; Hensel, 73.9; zygomatic width, 74.2; intertemporal width, 44.4; palatal length, 68.8; median length of nasals, 13.7; length of mandible, 74.5.

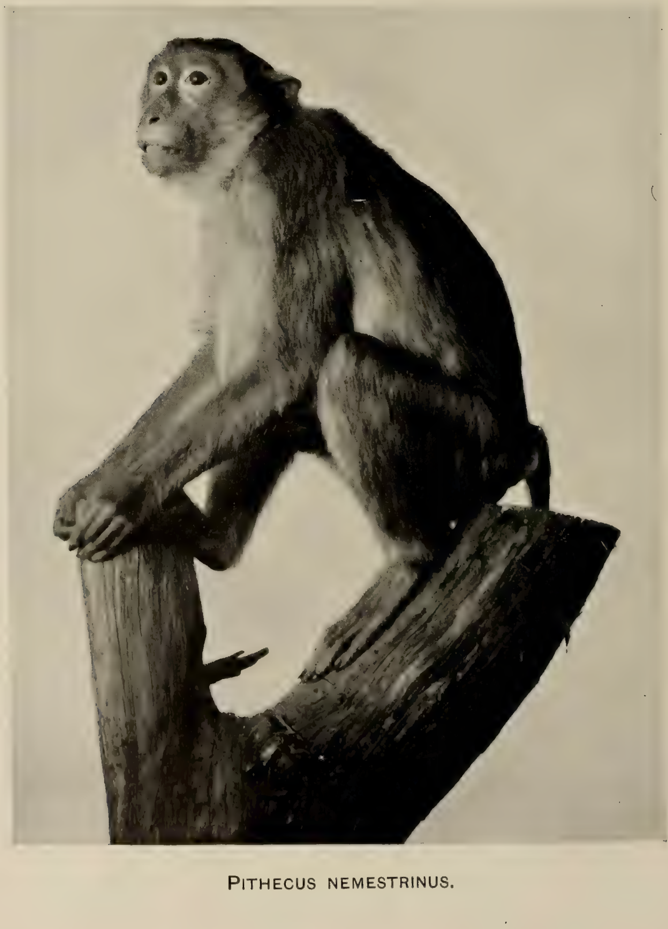
The last molars in both jaws not having yet appeared, a measurement of the tooth rows cannot be given. Size of second upper molar, .95 x .96. Ex type British Museum.

An adult female, which I consider to be of this species from Victoria Point, Tenasserim, is in the United States National Museum collected by Dr. W. L. Abbott. Top of head where the hair radiates is golden and yellow and black, the hairs annulated with these colors and tipped with black; upper parts burnt umber and mummy brown the latter most abundant between shoulders and on rump; outer side of limbs red, with an orange tinge; under parts, hairs very scanty, reddish.

Measurements. Total length, 540; tail, 40. Weight, 18¾ lb. Skull: total length, 123.9; occipito-nasal length, 103.9; intertemporal width, 46.3; zygomatic width, 82.9; palatal length, 45.5; length of upper molar series, 35.7; length of mandible, 89.5; length of lower molar series, 42; second upper molar, .91 x .87.



PITHECUS FUSCATUS.



PITHECUS NEMESTRINUS.

Pithecus fuscatus (Blyth).

Inuus fuscatus Blyth, Journ. Asiat. Soc. Beng., XLIV, 1875, extra no. p. 6.

Cynopithecus speciosus (nec Cuv.), Less., Spec. Mamm., 1840, p. 102.

Inuus speciosus (nec Cuv.), Wagn., Schreb., Säugth. Suppl., I, 1840, p. 146; V, 1855, p. 58; Gray, Handb. Mamm. Brit. Mus., 1843, p. 8; Schinz, Syn. Mamm., I, 1844, p. 59; Temm., Faun. Japon., Mamm., 1847, p. 9, pl. I, figs. 1-8, pl. II, figs. 1-6.

Macacus speciosus (nec Cuv.), I. Geoff., Cat. Primates, 1851, p. 31; Reichenb., Vollständ. Naturg. Affen, 1862, p. 141, pl. XXIV, figs. 365, 366; Sclat., Proc. Zool. Soc. Lond., 1864, p. 710; 1875, p. 418; Mivart, Proc. Zool. Soc. Lond., 1865, p. 563, (footnote); Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 32; Murie, Proc. Zool. Soc. Lond., 1872, p. 780; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 114.

Pithecus (*Macacus*) *speciosus* Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 116, 119.

Macacus fuscatus Thos., Proc. Zool. Soc. Lond., 1905, p. 336; Pocock, Proc. Zool. Soc. Lond., 1906, p. 558.

JAPANESE MACAQUE.

Type locality. Japan, locality unknown.

Geogr. Distr. Islands of Yakushima and Nippon to 41° North Latitude; common in the hills about Kyoto.

Genl. Char. Fur thick, soft, long; whiskers and beard present; face naked; tail short; callosities large.

There are a number of specimens of this species in the British Museum, from various parts of Japan, of both sexes, and from one of each of these I have taken the following descriptions:

Color. Male. Yakushima Island. No. 5. 11. 3. 1. The general appearance is that of a blackish brown animal speckled with yellow, the hairs on upper parts of the body being grayish, uniform on basal half, and then banded with black and buff for the rest of the length, and tipped with buff. This is also the general coloring of the head and limbs. A black streak on the forehead just above the eyes extending backwards over the ears to nape; face partly naked, cheeks covered with short buffy hairs; hands and feet black; chin, throat, entire under parts and inner side of limbs gray; tail very short, hairs gray at base, then banded with ochraceous and black, giving it a reddish hue below the black.

Female. No. 5. 11. 3. 5. resembles the male in markings, but is generally paler, especially on the head, legs, hands and feet. The top of the head is broccoli brown, the legs and feet wood brown, and hands mixed black and buff. The hair of both examples, like the species generally, is very long and fluffy, and hangs down covering the sides of the body and concealing the ears. The whiskers are long and bushy. Tail very short, covered thickly with rather long hair.

Measurements. Male. Total length, 720; tail, to end of hairs, 80; foot, 140, (skin). Skull: total length, 127.7; occipito-nasal length, 111.3; zygomatic width, 85.8; intertemporal width, 42.9; breadth of braincase, 63.7; palatal length, 49.1; median length of nasals, 33.5; length of upper molar series, 33.4; length of mandible, 92.5; length of lower molar series, 38.4.

A female from Tuino, Tokushima Keu, Shikokio, Japan, in the British Museum differs considerably in color from those described above, as there are no black bands on the hairs and very few black tips, so that the general color is a reddish brown. The hair on the legs and feet is unicolor, a grayish brown without bars or colored tips, as is also that on cheeks and about ears, although in these places the tips of the hairs are ochraceous buff as on the body hairs. The arms and hands are brown approaching a hair brown but darker, and the apical half is banded with brownish black and cream buff, and tipped with brownish black. Under parts and inner side of limbs whitish. Tail pale yellowish brown, brownish red near tip, above, reddish at root; beneath yellowish brown.

Measurements. Total length, 681; tail, 80; foot, 149; ear, 47, (Collector).

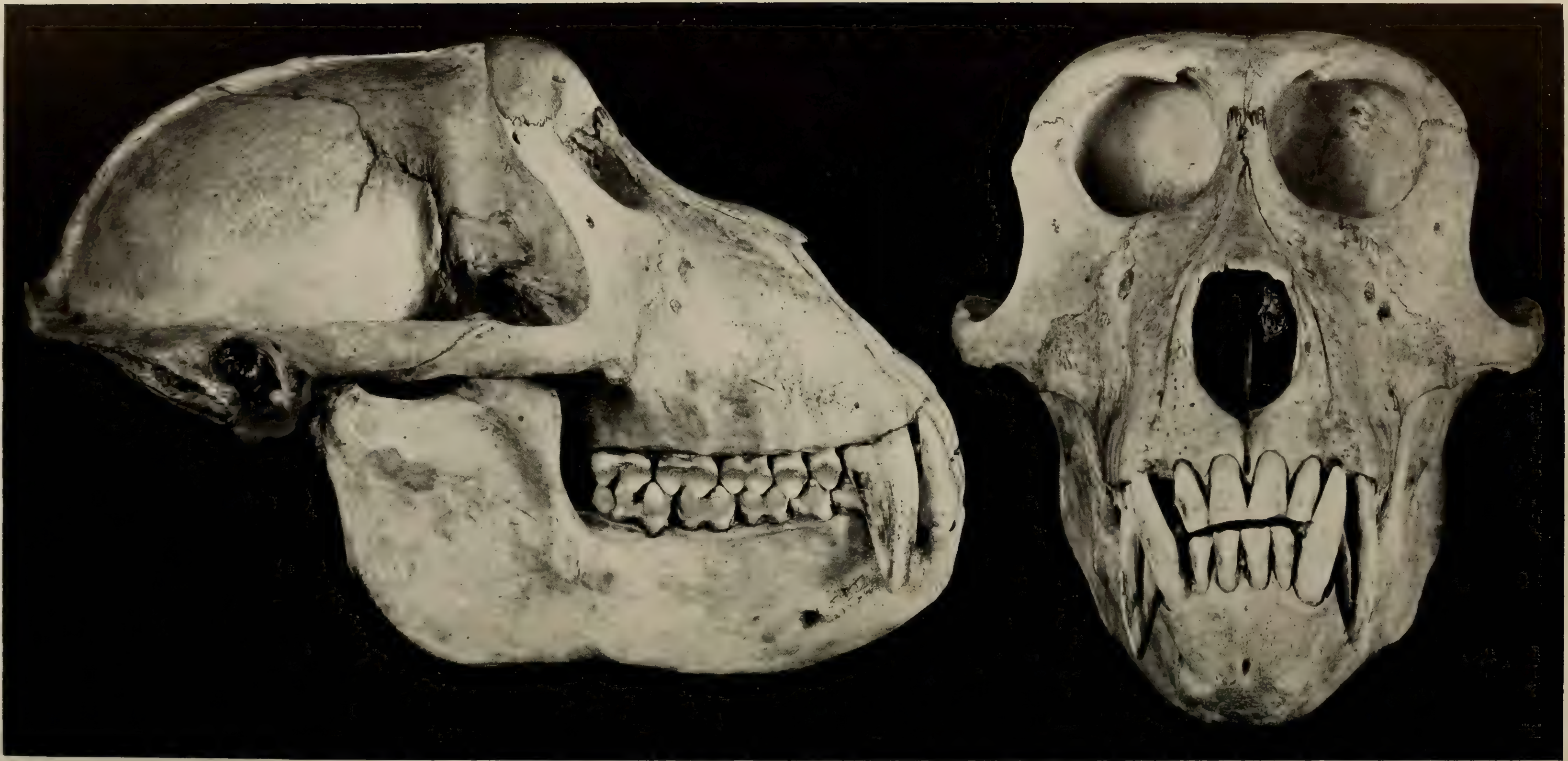
PITHECUS THIBETANUM A. Milne-Edwards.

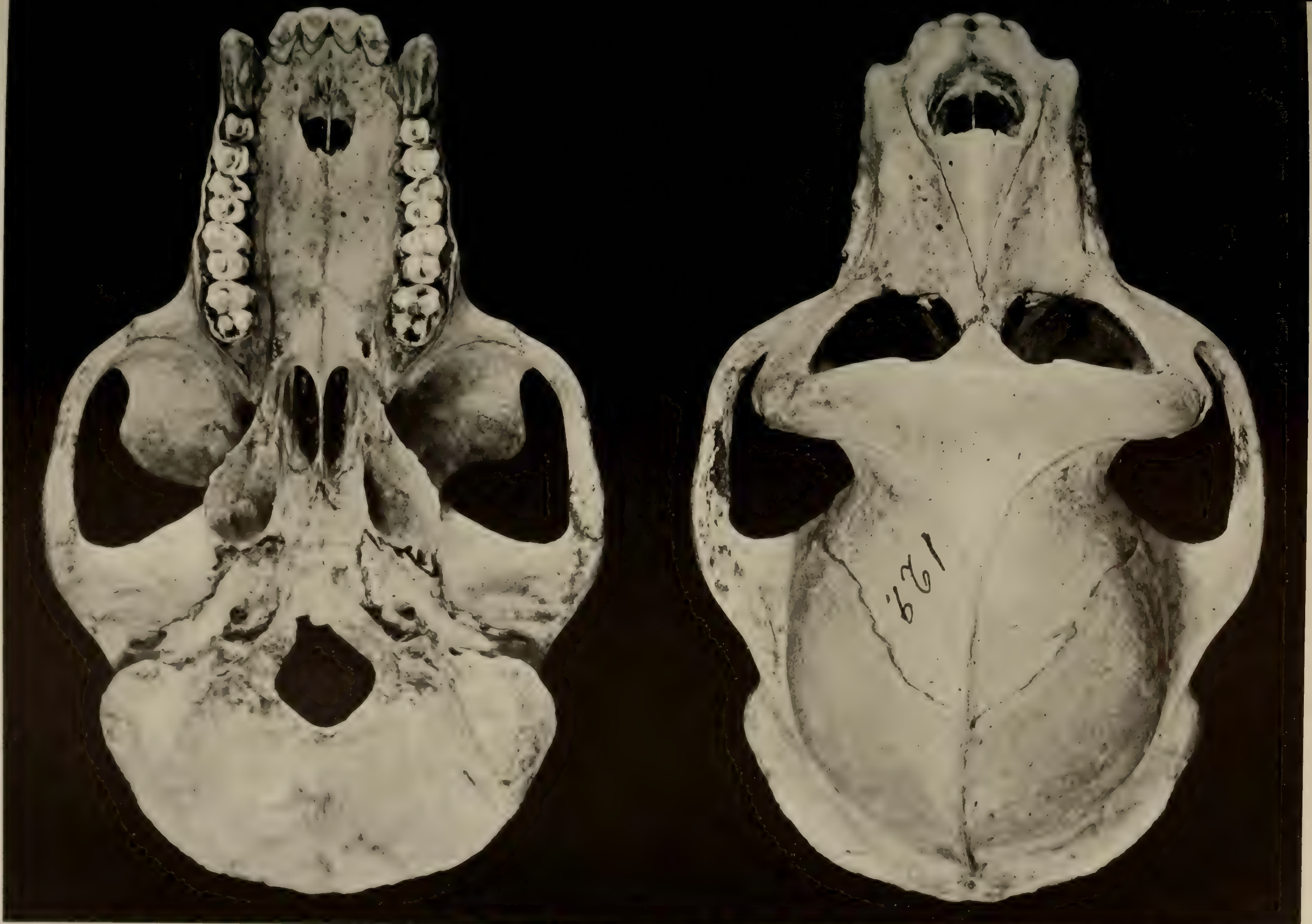
Macacus thibetanum A. Milne-Edw., Compt. Rend., LXX, 1870, p. 341; *Id.* Recherch. Mamm., 1868-74, p. 244, pls. XXXIV, XXXV; Blyth, Journ. Asiat. Soc. Beng., XLIV, 1875, extr. no. p. 7; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 112; Anders., Res. Zool. Exped. Yunnan, 1878, p. 79.

SHORT-TAILED THIBET MACAQUE.

Type locality. Mountains of Moupin, Thibet. Type in Paris Museum.

Genl. Char. Size large; limbs long; body apparently less thickset than P. VESTITUS or other large Macaques; tail very short.





PITHECUS THIBETANUM.

No. 129 Amer. Mus. Nat. Hist. Coll. ⅘ Nat. Size.

Color. Top of head and nape pale brown; face, whiskers, inner sides of limbs and under parts whitish gray; upper parts and sides of body, arms, hands, thighs and feet, blackish brown tinged with chestnut; legs from knees to ankles whitish gray, tinged with brown. Ex type in Paris Museum.

Measurements. Total length about 925; tail, 99.06. Skull: total length, 161; occipito-nasal length, 133; Hensel, 114; intertemporal width, 44; palatal length, 62; breadth of braincase, 69; median length of nasals, 35; length of upper molar series, 39; length of mandible, 120; length of lower molar series, 50. Ex type Paris Museum.

A fine, large, quite distinct species.

PITHECUS VESTITUS (A. Milne-Edwards).

Macacus vestitus A. Milne-Edw., Rev. gén. Scien., 1892, p. 671, (note).

Type locality. Kian Tatie, Thibet. Type in Paris Museum.

Geogr. Distr. Mountains of Setchuen, China, to Tengri-Nor in Batang, Thibet.

Genl. Char. Size large, body compact, heavy; limbs rather short, hands and feet small; hair long, thick, loose; tail short, bushy; hairs on forehead erect, directed forward.

Color. Hairs on top of head, nape, and shoulders, dark gray, tipped with yellowish brown; arms dark gray, tips of hairs whitish; middle of back reddish brown; lower part of back paler yellowish brown, grading into deep buff tinged with orange on sides of rump and thighs; lower part of hind limbs yellowish gray; under parts and inner side of limbs grayish white; hands and feet brownish gray; tail above like sides of rump, beneath yellowish gray. Face covered with short white hair; whiskers grayish white; hairs on ears yellowish brown. Ex type in Paris Museum.

Measurements. About equal in size to P. THIBETANUM. Skull: total length, 141; occipito-nasal length, 117; Hensel, 93; zygomatic width, 100; intertemporal width, 49; palatal length, 57; breadth of braincase, 69; median length of nasals, 26; length of upper molar series, 40; length of mandible, 100; length of lower molar series, 47. Ex type, male, in Paris Museum.

This is a pale colored Macaque, gray or grayish white on fore part of body, speckled with yellowish brown grading into a yellowish white, speckled with yellowish brown on back and washed with buff, and tinged with orange on the rump and thighs. The color of the callosities cannot be ascertained. The animal is very thickly covered with long loose hairs, to enable it to resist the high altitude it inhabits.

PITHECUS SANCTI-JOHANNIS Swinhoe.

Inuus sancti-johannis Swinh., Proc. Zool. Soc. Lond., 1866, p. 555; 1870, p. 615; Sclat., Proc. Zool. Soc. Lond., 1871, p. 222; Blyth, Journ. Asiat. Soc. Beng., XLIV, 1875, extra no. p. 5.

Macacus sancti-johannis Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 129; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 115, (text); Anders., Zool. Exped. Yunnan, 1878, p. 86; Forbes, Handb. Primates, II, 1894, p. 29.

Macacus rhesus Sclat., Proc. Zool. Soc. Lond., 1871, p. 222, (nec Audebert).

SAINT-JOHN MACAQUE.

Type locality. North Lena Island, Hong Kong, China. Type in British Museum.

Geogr. Distr. Known only from the type locality.

Color. Type specimen, quite a young animal, too young to designate a species upon, is in alcohol in the British Museum, and mindful of the changes spirits not infrequently create, it seems best to give Swinhoe's own description as it appeared when he procured it. The specimen is a female. "Eyes bright hazel; face and ears flesh-colored; a black tuft on either cheek like whiskers; skin of nude parts tinted with blue and sparsely grayish brown, covered with hairs of a light gray; the hairs on the belly buff; fur of upper parts washed with buff, which is lighter on the head, and brick-dust red around and about the rump. Tail 4½ inches, blackish, callosities flesh colored. Face narrow somewhat projecting."

Measurements. Skull: occipito-nasal length, 78.6; Hensel, 51.3; zygomatic width, 57.8; intertemporal breadth, 41.2; palatal length, 25.2; median length of nasals, 12.9; length of mandible, 58.8.

The animal was only about four months old and had not its complement of teeth, and it is impossible to decide whether it represents a new species or one already known. Adults from the same locality must be first procured before an accurate decision can be arrived at.

PITHECUS LASIOTIS (Gray).

Macacus lasiotis Gray, Proc. Zool. Soc. Lond., 1868, p. 61, pl. VI; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 129; Sclat., Proc. Zool. Soc. Lond., 1871, p. 222; A.

Milne-Edw., Recher. Mamm., 1868-74, p. 229; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 113; Anders., Exped. Yunnan, Zool., 1878, p. 83; Forbes, Handb. Primates, II, 1894, p. 25; Elliot, Cat. Mamm. Field Columb. Mus., F. C. M. Pub., VIII, 1906, p. 557, Zool. Ser.

Macacus tcheliensis A. Milne-Edw., Recher. Mamm., 1868-74, p. 227, pls. XXXII, XXXIII, ♀; David, Journ. N. China Branch Asiat. Soc., 1873, p. 220; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 113; Sclat., Proc. Zool. Soc. Lond., 1880, p. 537; Forbes, Handb. Primates, II, 1894, p. 22.

HAIRY-EARED MACAQUE.

Type locality. Province of Setchuen, China. Type in British Museum.

Geogr. Distr. Provinces of Setchuen and Tché-li, western and north-eastern China. Dupleix Mountains, 13,000 feet elevation, (Bonvalot).

Genl. Char. Size large; ears hairy; hairs of back and flanks with rufous termination; tail of type amputated.

Color. Top of head, neck and back nearly to rump, the hairs are slaty olive for basal two thirds their length, then banded with black and tawny, giving the appearance when the fur is smoothed down of a dark orange hue, the tawny bars overpowering the other hues; this color grades on the rump into uniform bright orange; arms slaty olive, hairs tipped with tawny; upper part of legs dark cinnamon, a very difficult hue to designate as it grades off from the orange of the rump, and becomes neither red nor brown; sides of head, throat and chest olive gray; abdomen olive gray, hairs tipped with ochraceous; hands blackish; feet mixed black and dark cinnamon. The tail has disappeared altogether. Face flesh color. Ex type British Museum.

Measurements. Total length, 610; foot, 163, (skin). Skull: total length, 133.5; occipito-nasal length, 112.3; zygomatic width, 99; intertemporal width, 49.4; breadth of braincase, 70.2; median length of nasals, 22.5; palatal length, 53.5; facial length, 65.8; length of upper molar series, 34.2; length of mandible, 97.1; length of lower molar series, 41.1. Ex type British Museum.

This is a large monkey, with long fluffy loose hairs of a rich coloring, the back especially appearing a rich orange, growing paler on the legs, while the arms retain the olive gray and tawny hue of the head and upper back. The type was alive in the Zoological Gardens of London and was always ranged with the short-tailed Macaques, but after its death it was discovered that the tail had been cut below the third vertebra, so it probably originally had a caudal appendage as long as TCHELIENSIS at least. The tufts of hairs on the ears, from which this species obtained its name, have now disappeared from the type, and the ears are nearly bare.

Macacus tcheliensis of Milne-Edwards, from the Province of Tché-li, North-eastern China, was described from a female which is in the Paris Museum. It is undoubtedly the same as the present species and consequently extends the range of M. LASIOTIS farther to the west, even to the borders of Thibet.

PITHECUS PAGENSIS (Miller).

Macacas pagensis Miller, Smith. Misc. Coll., XLV, 1903, p. 61, pls. XI, XII, XIII.

Type locality. South Pagi Island, west of Sumatra. Type in United States National Museum.

Genl. Char. Similar to P. NEMESTRINUS but much smaller; color darker; teeth as in P. NEMESTRINUS but smaller.

Color. Top of head and upper parts bistre; flanks isabella; outer surface of arms light russet; of legs dark isabella; of thighs bistre; inner surface of limbs, and the belly isabella; throat and chest fawn; sides of neck grayish cream buff; cheeks dark brown; hands and feet dusky brownish; tail with light isabella hairs throughout; "Callosities fleshy brown; palms and soles fleshy brown." Ex type United States National Museum.

Measurements. Female. Total length, 580; tail, 145; foot, 125. Skull: total length, 109; occipito-nasal length, 92.4; Hensel, 74.6; zygomatic breadth, 70.8; width of braincase above roots of zygomata, 60.6; palatal length, 43.3; median length of nasals, 23.9; length of upper molar series, 31.5; crown of last upper molar, 7.8 x 7; length of mandible, 78.5; length of lower molar series, 34.2. Ex type United States National Museum.

This is a very small Macaque, with the upper parts black or nearly so, this color going over to the sides, forming a very conspicuous contrast to the russet limbs. The type is unique.

Subgenus Nemestrinus.

Tail not under 8 nor over 12 inches in length.

PITHECUS VILLOSUS (True).

Macacus rhesus villosus True, Proc. U. S. Nat. Mus., XVII, 1894, p. 2.

Type locality. Lolob, Cashmere. Type in United States National Museum.

Genl. Char. Fur long, loose, woolly; tail very short, bushy.

Color. Top and sides of head and upper parts tawny ochraceous and black, in some examples rich orange red on lower back and rump, the hairs being gray at base and banded with the two other colors; outer side of arms grayish brown, hairs barred with cream buff; outer side of legs buff, hairs annulated with ochraceous buff; inner side of arms dark gray; throat and under parts and inner side of legs yellowish white; hands like arms, fingers covered with long gray hairs; feet pale gray drab, toes hidden by long hairs; tail above like back at base, becoming more yellowish towards tip; face flesh color, nearly nude. Ex type United States National Museum.

Measurements. Total length, 886; tail, 287; foot, dry skin, 166. Skull: total length, 131.5; occipito-nasal length, 107.4; Hensel, 94; zygomatic width, 94; intertemporal width, 43.7; palatal length, 53.4; median length of nasals, 22.7; length of upper molar series, 35.8; length of mandible, 95; length of lower molar series, 40.9. Ex type United States National Museum.

This fine species is quite different from all the very short tailed Macaques, and some examples are much redder on lower back and rump than P. RHESUS. The type is among the least red of the specimens procured.

PITHECUS LITTORALIS Elliot.

Pithecus littoralis Elliot, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 250.

Type locality. Kuatun, Province of Fukein, China. Type in British Museum.

Genl. Char. General hue tawny olive and black; tail short, bushy; fur loose, long, soft.

Color. Female. Top of head and hind neck mummy brown speckled with ochraceous buff; upper parts tawny olive and black grading into uniform russet on the rump; arms to elbows tawny olive, paler than the back; lower arms and hands olive brown speckled with yellow; outer surface of thighs russet; legs and feet buff with an olive tinge; sides of head tawny olive; long, brown and black, stiff hairs over eyes on brow, inclining upward and to either side; entire under parts and inner side of limbs yellowish gray; tail above at base dark russet, darker than rump, remainder brownish black; beneath buff yellow; face flesh color covered sparsely with blackish brown hairs. Ex type British Museum No. O. 5. 8. 1.

Measurements. Total length, 810; tail, imperfect, 200; from another specimen with complete tail, No. 71. 3. 3. 5; to end of hairs 280. Skull: total length, 118.6; occipito-nasal length, 102.7; Hensel, 79.3; zygomatic width, 83.7; intertemporal width, 46; width of braincase, 64.2; median length of nasals, 19.8; palatal length, 45.5; length of upper molar series, 33.2; length of mandible, 85.4; length of lower molar series, 37. Ex type British Museum.

There are three specimens in the British Museum all females, but agreeing in texture and color of fur, two from Kuatun, and the third from the Zoological Society Gardens, evidently erroneously attributed to Cashmere. Both the Kuatun examples have lost a portion of their tails, but the third specimen has a tail of normal length. In general coloring this animal resembles *P. tcheliensis* Milne-Edwards = P. LASIOTIS Gray, but the great distance intervening between the habitats, nearly the entire width of China, does not permit the supposition that they are of the same species. It is a much paler animal than P. LASIOTIS. It can only be regarded as the south coast representative of the Setchuen species P. LASIOTIS of which *P. tcheliensis* is the female, with the loose, soft, fluffy fur. The male probably when procured will be darker in color.

PITHECUS CYCLOPSIS (Swinhoe).

Macacus cyclopsis Swinhoe, Proc. Zool. Soc. Lond., 1862, p. 350, pl. XLII; 1864, p. 380; 1870, p. 615; Sclat., Proc. Zool. Soc. Lond., 1864, pp. 710, 711, fig.; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 12; Murie, Proc. Zool. Soc. Lond., 1872, p. 772; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 111; Anders., Zool. Exped. Yunnan, 1878, p. 86; Forbes, Handb. Primates, II, 1894, p. 28.

Macacus (*radiatus*) *affinis* Blyth, Cat. Mamm. Asiat. Soc. Mus., 1863, p. 8, (Formosa).

Macacus (*sinicus*) *affinis* Anders., Exped. Yunnan, Zool., 1878, p. 91, (footnote).

FORMOSA MACAQUE.

Type locality. Island of Formosa. Type in British Museum.

Geogr. Distr. Known only as from the Island of Formosa.

Genl. Char. Fur thick, woolly; whiskers and beard present, the latter short; ears small, hairy; tail stout, tufted.

Color. Hairs of head and upper parts of body purplish gray, banded on apical half with buff, giving a dark olive brown hue to the pelage; hairs on arms and hands darker purplish; back sparsely speckled with yellow; legs olive speckled with yellow; feet grayish brown; under parts and inner side of limbs whitish gray; tail black above, olive gray beneath, tip purplish black. Ex type British Museum.

Top of head and upper parts olive gray with a brownish tinge, the hairs ringed or speckled with yellow; arms darker gray; legs more yellowish; chin and line on sides of face, and inner side of limbs white; tail same color above as back with a black line down the center, beneath paler; hands and feet yellowish brown, fingers and toes gray; under parts whitish; face pale flesh color, eyes hazel. No callosities, or else hidden in fur. Ex living individual in Zoological Gardens, Kyoto, Japan.

Measurements. Total length, 750; tail, 305; foot, 120. Skull: total length, 117.9; occipito-nasal length, 101.9; Hensel, 82.1; zygomatic width, 83.4; intertemporal width, 47.5; breadth of braincase, 60.7; median length of nasals, 17.9; palatal length, 14.2; length of upper molar series, 35.3; length of mandible, 85.3; length of lower molar series, 41.6. Ex type British Museum, juv. ♂.

The type is a young male, and is very much darker than the fine living animal in the Zoological Garden at Kyoto, which came from Formosa. It is probable that when the type should have reached the adult state, the arms would have become lighter from an increase of the yellow bands on the hairs, which are not so numerous as on the upper parts. There is no indication on the type, nor was there in the living animal in Kyoto, of any orange red hue on the hinder parts or thighs so characteristic of P. RHESUS. The Kyoto animal was much the older, and looked fully adult.

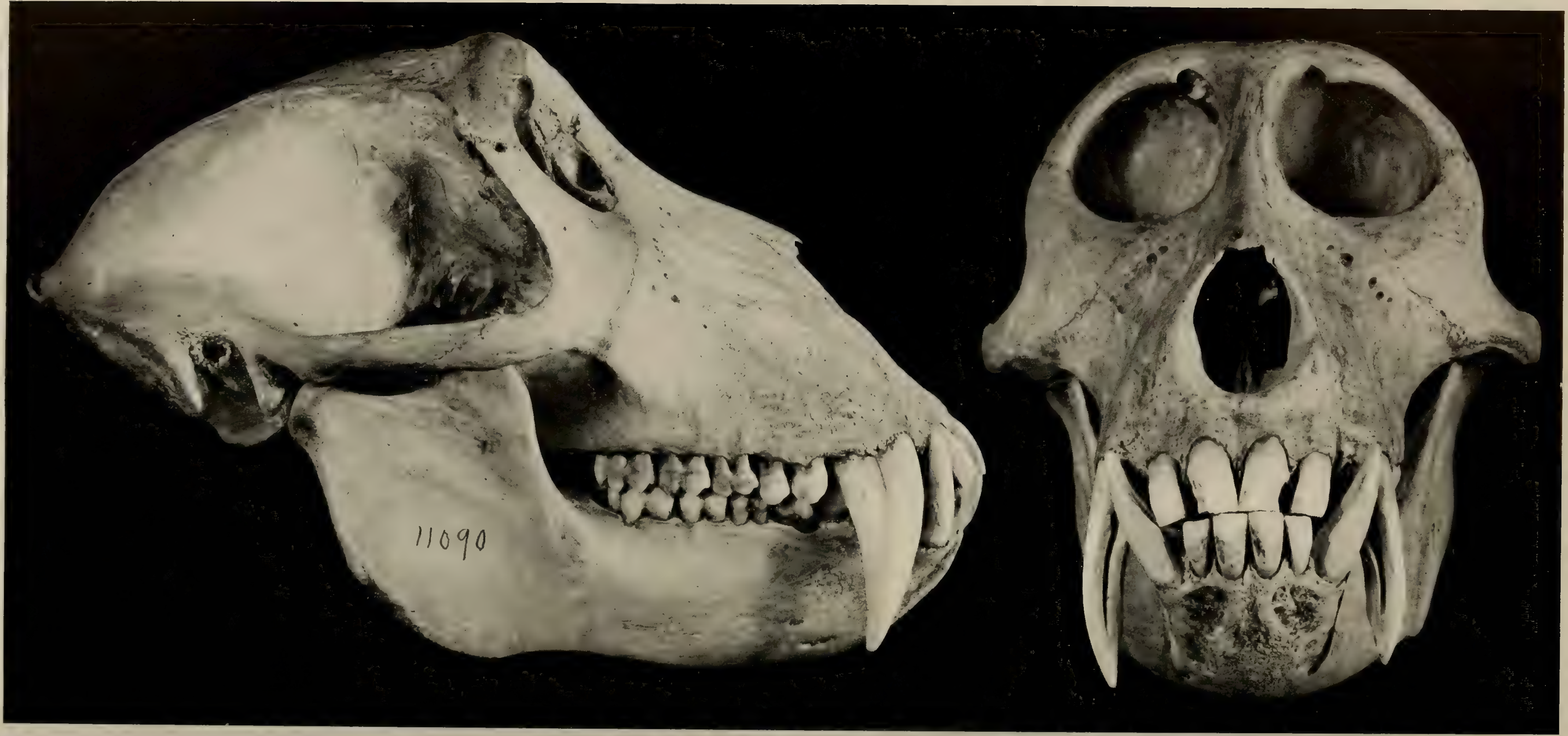
Mr. Swinhoe (l. c.) gives the following account of this monkey as learned by him in Formosa: "This, as far as I could learn, was the only species of Monkey in the Island of Formosa. It affects rocks and declivities that overhang the sea, and in the solitary caverns makes its abode. On the treeless mountain in the S. W. called Ape's Hill, it was at one time especially abundant, but has since almost entirely disappeared. About the mountains of the north and east it is still numerous, being frequently seen playing and chattering among the steep rocks, miles from any tree or wood. It seems to be quite a rock-loving animal, seeking the shelter of caves during the greater part of the day, and assembling in parties in the twilight, and feeding on berries, the tender shoots of plants, grasshoppers, crustacea and mollusca. In summer it comes in numbers during the night, and commits depredations among the fields of sugar cane, as well as among fruit-trees, showing partiality for the small, round, clustering berries of the Longan, *Nephelium longanum.* In the caverns among these hills they herd; and in June the females may be frequently seen in retired parts of the hills, with their solitary young ones at their breasts.

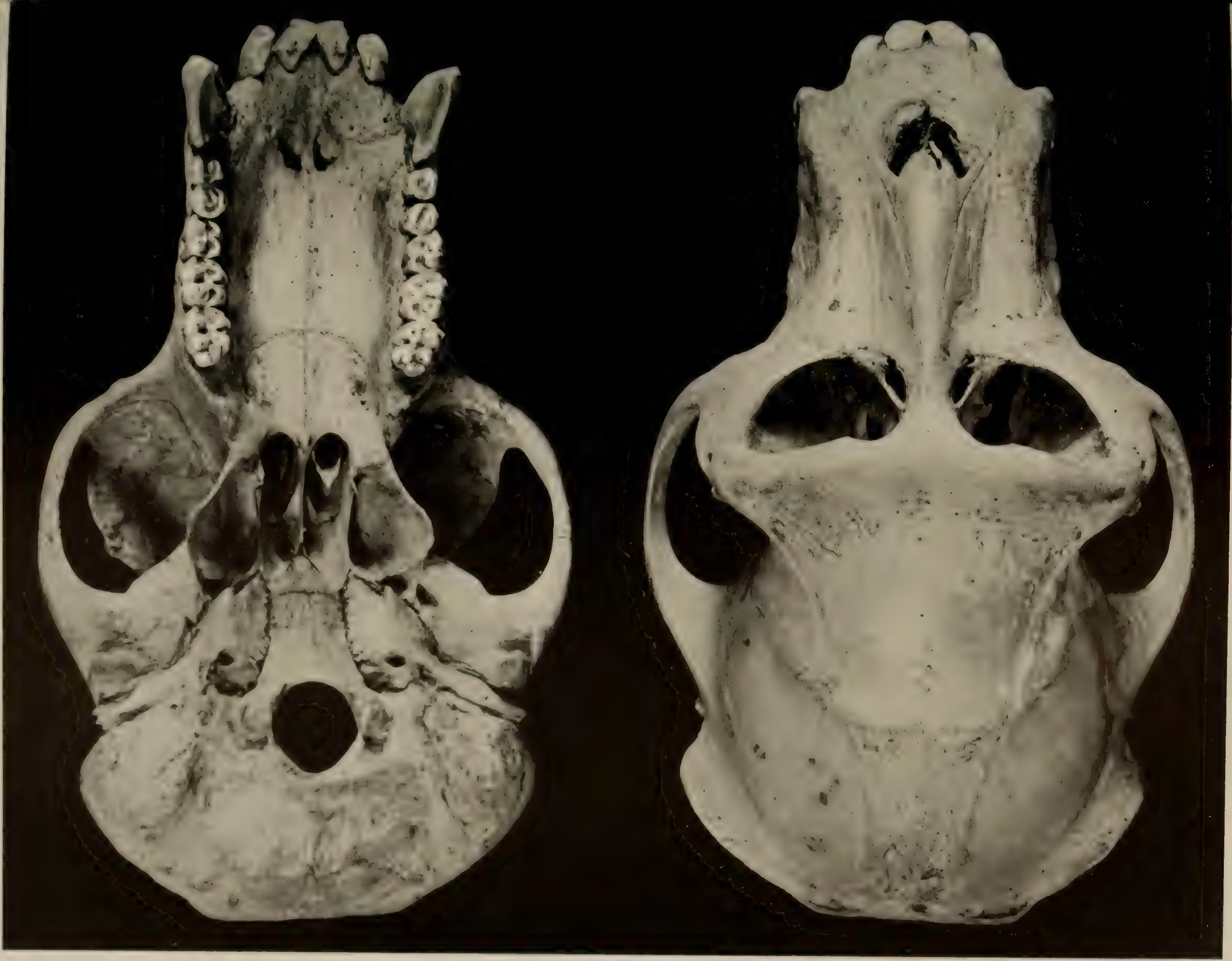
"These animals betray much uneasiness at human approach, disappearing in no time, and skulking in their holes until the intruder has passed. They seem, too, to possess abundance of self complacence and resource; for I have frequently seen a Monkey seated on a rock by himself, chattering and crying merely for his own amusement and gratification. Whatever Mr. Waterton may say of the tree-loving propensities of Monkeys in general, it is very certain that this species shows a marked preference for bare rocks, covered only with grass and bush; for if he preferred the forest he might very easily satisfy his desire by retiring a few miles further inland, where he could find it in abundance. But, on the contrary, in the forest, he is only occasionally an intruder, resorting thither when foods fail him on the grassy hills by the sea, where he loves to make his home.

"Rock-Monkeys are also found, I am told, in the Island of Lintin, near Hong Kong, as well as on a few other islands on the Chinese coast; but, as I have never seen any of them, I am unable to say whether they are of the same species as the Formosan. The Chinese have a fanciful idea that the tail of a Monkey is a caricature of the Tartar pendant into which they twist their long black hair, and they invariably chop it off any Monkey that comes into their possession. Hence the difficulty of procuring Monkeys in China with perfect tails."

The female of this monkey on arriving at maturity exhibits the most extraordinary development of the region at the root of the tail, and not only are the callosities and external genital organs swollen but the tail itself at the proximal end is greatly increased. The skins and subcutaneous tissues are enormously extended, and colored purple, deep red, and roseate, and hang in deep folds as if overcharged with blood, the whole affair assuming a hideous aspect. This immense dilatâtion of the buttocks is provided for by an aberrant adaptation of the ischial bones, and Dr. Murie (l. c.) in his examination of the skeleton found that the "pelvic bones have a most unusual curvature in their long axis, certainly very different from the *Rhesus* and other Macaques. The ilium anteriorly overrides the sacrum far more than is ordinarily the case. Its upper surface is markedly concave trans-

PLATE XXII.





PITHECUS NEMESTRINUS.

No. 11090 Amer. Mus. Nat. Hist. Coll. ⅘ Nat. Size.

versely, but longitudinally is strongly convex. * * * A special feature is the thrusting forward of the pubes, and partly the ischia, leaving a wide interval, therefore, between the buttocks and tail."

PITHECUS NEMESTRINUS (Linnæus).

Simia nemestrina Linn., Syst. Nat., I, 1766, p. 35; Schreb., Säugth., 1775, p. 79, pl. IX; Bodd., Elench. Anim., 1784, p. 57; Gmel., Syst. Nat., I, 1788, p. 28; Shaw, Genl. Zool., I, Pt. I, 1800, p. 25, pl. XIV; Fisch., Syn. Mamm., 1829, p. 29.

Papio nemestrinus Erxl., Syst. Reg. Anim., 1777, p. 20.

Cynocephalus nemestrinus Latr., Nat. Hist. Buffon, (Sonnini ed.), 1809, p. 291.

Inuus nemestrinus E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 101; Kuhl, Beitr. Zool., 1820, p. 17; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 143; V, 1855, p. 57.

Macacus nemestrinus Desm., Mamm., 1820, p. 66; F. Cuv., Hist. Nat. Mamm., Livr. XLII, 1822; 2me ed., 1833, p. 95, pls. XXXIII, XXXIV; Less., Man. Mamm., 1827, p. 143; E. Geoff., Cours Hist. Nat. Mamm., 1828, p. 23, 8me Leçon; Less., Spec. Mamm., 1840, p. 95; Gray, Handb. Mamm. Brit. Mus., 1843, p. 7; I. Geoff., Cat. Primates, 1851, p. 30; Reichenb., Vollständ. Naturg. Affen, 1862, p. 139, pl. XXIV, figs. 349-353; Mivart, Proc. Zool. Soc. Lond., 1865, p. 562; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 29; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 110; Anders., Exped. Yunnan, Zool., 1878, p. 77; Blanf., Faun. Brit. Ind., Mamm., 1888, p. 20; Sclat., Proc. Zool. Soc. Lond., 1893, p. 325, (Borneo); Forbes, Handb. Primates, II, 1894, p. 16; Flow., Proc. Zool. Soc. Lond., 1900, p. 315; Bedd., Proc. Zool. Soc. Lond., 1904, p. 161, (Brain); Pocock, Proc. Zool. Soc. Lond., 1906, p. 558; Elliot, Cat. Mamm. Field Columb. Mus., F. C. M. Pub., VIII, 1906, p. 567, Zool. Ser.

Le singe à queue de cochon F. Cuv., Hist. Nat. Mamm., 1822, Livr. XXXVI, pl. ♂.

Simia carpolegus Raffles, Trans. Linn. Soc. Lond., 1822, p. 243.

Macacus (maimon) brachyurus H. Smith, Intr. Mamm., in Nat. Libr., I, 1842, p. 103, pl. I, Albino.

Pithecus (Macacus) nemestrinus Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 115, 118.

Macaca broca Miller, Proc. U. S. Nat. Mus., XXIX, 1906, p. 558.

Macaca nemestrina Lyon, Proc. U. S. Nat. Mus., XXXIII, 1907, p. 565.

Pithecus nemestrinus Lyon, Proc. U. S. Nat. Mus., XL, 1911, p. 136.

PIG-TAILED MACAQUE. Native name *Broh,* or Cocoanut Monkey of the English in Straits Settlements; *Berok,* (pronounced *Broh*), of the Malays, and *Myouk-padi* of the Burmese.

Type locality. Sumatra.

Geogr. Distr. Southern Burma, Tenasserim, Malay Peninsula, and islands of Banka, Sumatra, Java and Borneo.

Color. Top of head black; sides of head ochraceous buff; back of head and neck mixed black and red, the black hairs being banded and tipped with that color; hair on shoulders very long and reddish, the hairs banded with black; back behind shoulders to rump, uniform black; arms and hands, legs and feet reddish yellow, paler on inner sides; under parts yellowish; callosities red; tail above black like back, beneath reddish yellow.

Measurements. Skull: total length, 142; Hensel, 110; zygomatic width, 96; intertemporal width, 48; orbital width, 62; palatal length, 64; length of upper molar series, 37; length of mandible, 112; length of lower molar series, 50. Ex specimen in Calcutta Museum.

This Macaque appears to persist truer to type, no matter where it comes from, than any other species of the genus. There may be a slight variation in size, and in the width of the black dorsal area, perhaps a slight difference in the depth of hue of the limbs, and there may be individual differences in skulls, but these never are sufficient to cause their possessors to take a separate rank, nor are they confined to examples of a restricted locality. Therefore it has been found possible to recognize only this and the two following species, irrespective of the locality whence the individual may have come. The type of *P. brocus* in the United States National Museum, has been examined with Mr. Miller's assistance, and compared with a far greater amount of material than was available when he described the form, and we have decided that it cannot be separated from P. NEMESTRINUS and will have to become a synonym.

PITHECUS ADUSTUS (Miller).

Macaca adusta Miller, Proc. U. S. Nat. Mus., XXIX, 1906, p. 559.

SUN-BURNED MACAQUE.

Type locality. Champang, Tenasserim, Malay Peninsula. Type in United States National Museum.

Geogr. Distr. Tenasserim, Malay Peninsula.

Genl. Char. Similar to P. NEMESTRINUS, but hairs annulated.

Color. Male. Crown blackish, neck, shoulders and upper parts of back bright russet annulated with black; lower back, and upper parts of thighs light ochraceous buff, unspeckled near callosities; faint dorsal line, blackish; arms and legs grizzled blackish and drab gray; under parts drab gray, darkest across belly; hands and feet darker than limbs; buttocks yellowish white; tail above black, beneath pale brownish yellow. Ex type United States National Museum.

Female. The female is much paler in color, and is generally without the conspicuous annulations on the upper parts, which are buff and brownish black on lower back, and a buff brown on upper back, shoulders, and top of head; limbs, hands and feet yellowish brown, quite pale; radiating hairs from ears cream buff. No dorsal line. Altogether she presents a striking contrast to the male.

Measurements. Total length, 785; tail, 230; foot, 163. Skull: greatest length, 136; occipito-nasal length, 111.5; breadth of braincase above zygomata, 64.4; Hensel, 98.1; zygomatic breadth, 94; palatal length, 54; median length of nasals, 30.7; length of upper molar series, 38; length of mandible, 99.5; length of lower molar series, 46. Ex type United States National Museum.

A rather remarkable species, with its long annulated hair falling over the shoulders and sides like a mane. It represents the Sumatran animal in Tenasserim.

PITHECUS INSULANUS (Miller).

Macaca insulana Miller, Proc. U. S. Nat. Mus., XXIX, 1906, p. 560.

CHANCE ISLAND MACAQUE.

Type locality. Chance Island, Mergui Archipelago.

Genl. Char. Similar to P. ADUSTUS but smaller, hair on shoulders longer.

Color. A perfect replica of P. ADUSTUS but smaller in size.

Measurements. Total length, 717; tail, 183. Skull: total length, 130.8; occipito-nasal length, 109.3; intertemporal width, 44.2; zygomatic width, 93; palatal length, 55; median length of nasals, 28.2; length of upper molar series, 32.3; length of mandible, 95.3; length of lower molar series, 41.8. Ex type United States National Museum.

This is a small island representative of the Tenasserim species, with the hair over shoulders somewhat longer. In color there is practically no difference between the forms. In the skulls there are differences perceptible, but mainly such as the disparity in size of the two animals would cause. Thus, the rostrum of the present species while shorter is slightly broader; the braincase is also broader, but not so high; orbital ridges lighter.

PITHECUS ANDAMANENSIS (Bartlett).

Macacus leoninus (nec Shaw), Blyth, Cat. Mamm. Mus. Asiat. Soc. Beng., 1863, p. 7; Sclat., Proc. Zool. Soc. Lond., 1870, p. 663, pl. XXXV; Anders., Zool. Res. Exped. Yunnan, 1878, p. 52; *Id.* Cat. Mamm., Ind. Mus. Calc., Pt. I, 1881, p. 71; Blanf., Faun. Brit. Ind., Mamm., 1891, p. 18, fig. 6; Forbes, Handb. Primates, II, 1894, p. 14; Sclat., Proc. Zool. Soc. Lond., 1898, p. 280; Flower, Proc. Zool. Soc. Lond., 1900, p. 316.

Macacus andamanensis Bartl., Land and Water, VIII, 1869, p. 57; Sclat., Proc. Zool. Soc. Lond., 1869, p. 467, fig.

Inuus leoninus Blyth, Journ. Asiat. Soc. Beng., XLIV, 1875, p. 2.

BURMESE PIG-TAILED MONKEY.

Type locality. Arakan. Type in Calcutta Museum.

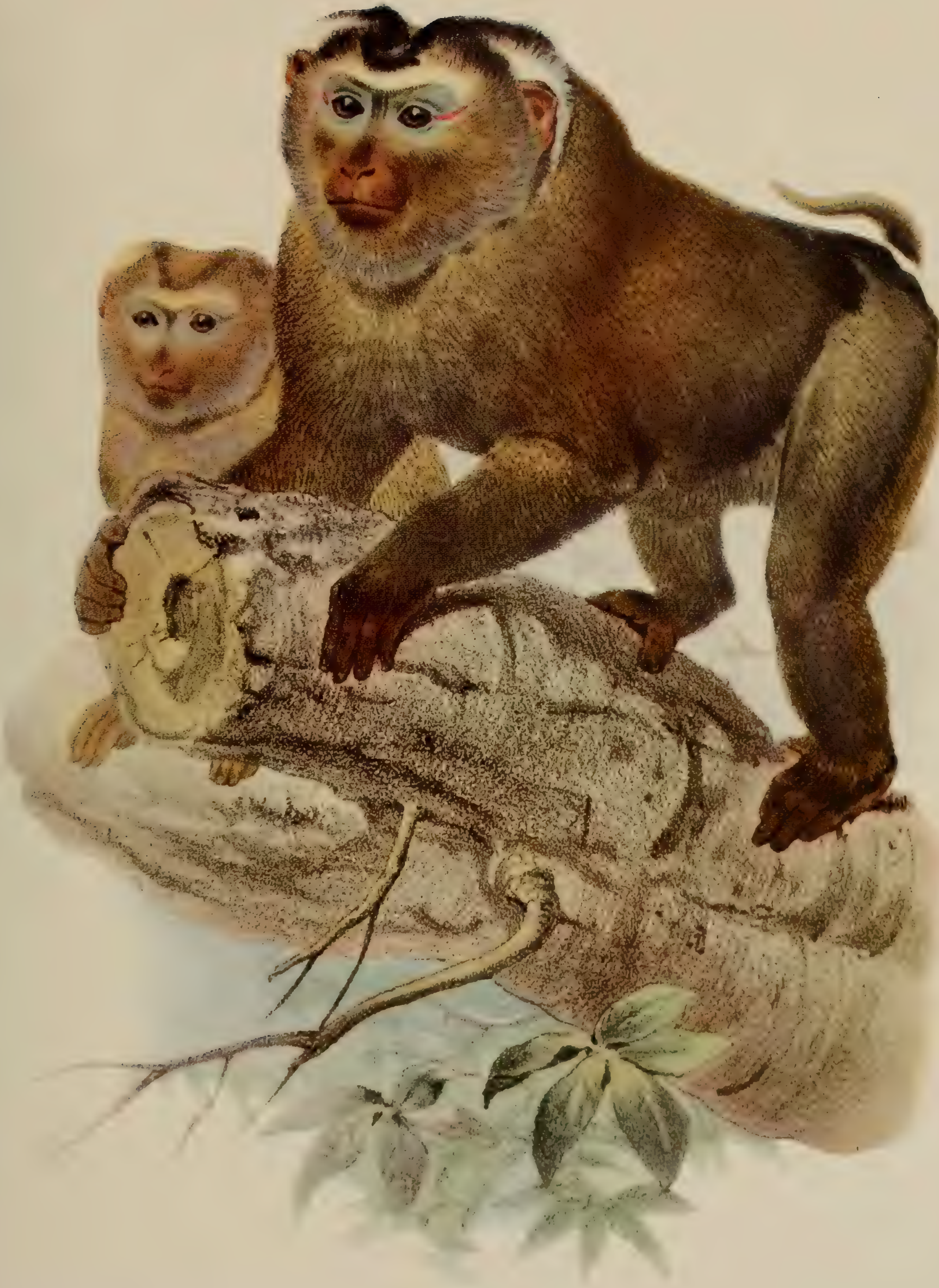
Geogr. Distr. Arakan, and Valley of the Irawady, Upper Burma. Siam? Andaman Islands, (introduced).

Color. Top of head mummy brown with a reddish tinge; sides of head and face yellowish, this color extending down sides of neck behind ears; back of head and neck, back, and sides reddish brown, hairs banded with yellowish; shoulders and upper part of arms more reddish than back and sides, the hairs banded with ochraceous; anal region and hind part of thighs yellow; arms and hands like the back; legs yellowish brown much lighter than the back; feet dark brown; under part of body yellowish white; tail short, slender, brownish black above, yellowish beneath, tip red. Ex Blyth's type Calcutta Museum.

The skull of the type is not in the Calcutta Museum, but the following measurements are taken from a skull of the species in the collection:

Measurements. Skull: total length, 154.5; Hensel, 110; zygomatic width, 104; palatal length, 75; width of braincase, 68; length of upper molar series and canines, 48; length of mandible, 117; length of lower molar series and canines, 58.

The above description of this species was taken from the type in the Calcutta Museum. The specimen has faded greatly, and would hardly now be considered as fairly representing the species as com-



PITHECUS ANDAMANENSIS

pared with a freshly killed specimen, or a living individual. The description shows the type as it is to-day, but allowances will have to be made for lapse of time, and possibly some lack of careful attention.

A large black patch on top of the head coming to a point in front; a conspicuous line on forehead, and space around the eyes white; space around ears gray; hair on cheeks long, grayish brown; shoulders reddish brown; back very dark brown, dorsal line almost black; arms, legs and hands grayish brown; feet darker brown; under parts grayish brown; anal region white with a narrow red line down the center; tail short, carried over the back, darker brown above, white beneath; face livid flesh color; eyes hazel. Description from living individual in the Zoological Gardens, Calcutta.

The name *leoninus* having been employed by Shaw previously (l. c.) for P. ALBIBARBATUS (Kerr), cannot be again used, and Bartlett's name ANDAMANENSIS, the only one besides Blyth's bestowed on the species, will have to be the one by which this monkey must be hereafter known. This is unfortunate as this animal is not indigenous to the Andaman Islands having been transported there, and the name is a misleading one, but its adoption appears to be imperative.

PITHECUS ASSAMENSIS (McClelland).

Macacus assamensis McClell., Proc. Zool. Soc. Lond., 1839, p. 148; Schinz, Syn. Mamm., 1844, p. 57; Blyth, Journ. Asiat. Soc. Beng., XIII, 1844, p. 776; *Id.* Ann. Mag. Nat. Hist., IX, 1851, p. 313; *Id.* Cat. Mamm. Mus. Asiat. Soc. Beng., 1863, p. 8; Horsf., Cat. Mus. E. Ind. Co., 1851, p. 21; Sclat., Proc. Zool. Soc. Lond., 1868, p. 566; 1871, p. 222; Blyth, Journ. Asiat. Soc. Beng., XLIV, 1875, extra no. p. 5; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 113; Anders., Exped. Yunnan, Zool., 1878, p. 64.

Macacus (*Pithex*) *pelops* Hodg., Journ. Asiat. Soc. Beng., IX, 1840, p. 1213; X, p. 908; *Id.* Calc. Journ. Nat. Hist., II, 1842, p. 212; IV, 1844, p. 285; *Id.* Ann. Mag. Nat. Hist., VIII, 1842, p. 315.

Papio (*Rhesus*) *assamensis* Ogilby, Royle, Ill. Himal. Bot., Mamm., 1840, p. 16; *Id.* Madras Journ. Litr. Scien., 1840, p. 144.

Macacus pelops Schinz, Syn. Mamm., 1844, p. 69; Hodg., Cat. Mamm. Nepaul, 1846, p. 2; Blyth, Ann. Mag. Nat. Hist., XX, 1851, p. 313; Reichenb., Vollständ. Naturg. Affen, 1862, p.

141, not figured; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 30.

Inuus (*Rhesus*) *pelops* Wagn., Schreb., Säugth. Suppl., V, 1855, p. 56.

Inuus assamensis Wagn., Schreb., Säugth. Suppl., V, 1855, p. 57; Hutton, Journ. Asiat. Soc. Beng., XXXIII, 1864, Append., p. XIII.

Inuus pelops Hutton, Journ. Asiat. Soc. Beng., XXXIII, 1864, p. XIII; Jerd., Mamm. Ind., 1867, p. 11; Blyth, Journ. Asiat. Soc. Beng., XLIV, 1875, extra no. p. 6.

Macacus rheso-similis Sclat., Proc. Zool. Soc. Lond., 1872, p. 495, pl. XXV, juv.; 1875, p. 418.

A supposed new monkey from the Sunderbunds Anders., Proc. Zool. Soc. Lond., 1872, p. 529, (figs. skull).

Macacus rhesus villosus Blanf., Proc. Zool. Soc. Lond., 1898, p. 361.

HIMALAYAN MACAQUE.

Type locality. Assam.

Geogr. Distr. India, in the Himalaya Mountains from Masuri; Bengal Sunderbunds east of Calcutta, (Blanford); Irawady 25 miles below Bhamo, (Anderson); Sikhim, Bhutan, Assam.

Genl. Char. Face dusky, hair wavy or woolly; buttocks hairy around callosities.

Measurements. Skull of a female from Irawady, specimen taken between twenty and twenty-five miles below Bhamo, by Anderson. "Greatest length from occiput to tip of premaxillaries 4.57 in.; anterior border of occipital foramen to tip of premaxillaries, 3.24; occipital ridge to nasal process of frontal, 3.26; anterior margin of auditory openings to tip of premaxillaries, 3.40; breadth between auditory openings, 2.08; greatest breadth behind root of zygoma, 2.40; greatest facial breadth across fronto-malar suture, .48; anterior margin of occipital foramen to posterior border of mesial line of palate, 1.41; end of premaxilla to nasal process of frontal, 2; breadth of temporal fossa behind tempero-malar suture, 1.75; breadth across zygomatic arch, 2.91; breadth of muzzle at base of last tooth, 1.40; breadth of muzzle at first bicuspid, 1.30; height of orbit, .85; diameter of orbit, .93; length of lower jaw in a line of alveolar margin, 2.91 in."

McClelland's description (l. c). is brief and as follows: "bluish-gray, with dark brownish on the shoulders; beneath light gray; face flesh coloured, but interspersed with a few black hairs; length 2½ feet;

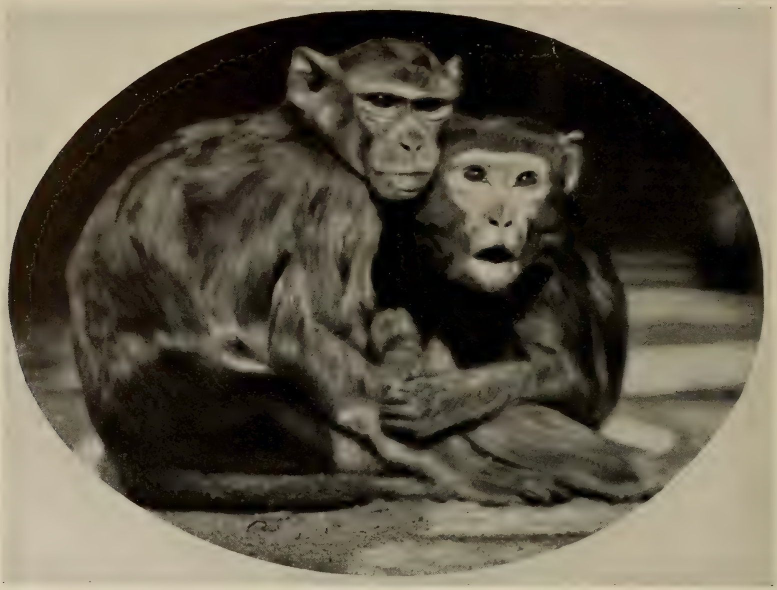
proportions strong; canine teeth long and deeply grooved in front; the last of the cheek-teeth in the upper jaw blunt."

The type of *"Inuus" pelops* Hodgson is in the British Museum. It was mounted but has been made into a skin and is in very fair condition. It is of a dull brown with a slight yellowish tinge on the head and upper parts, the hairs not annulated, and paler on the rump; outer surface of arms smoke gray, hands blackish; legs like rump, a darkish clay color becoming grayish brown at ankles; feet covered with clay colored hairs; tail purplish brown; under parts and inner side of limbs gray. Hairs on head radiate from a center as described by Anderson of the type. There can be no doubt that this is an immature animal of P. ASSAMENSIS. There are two specimens in the British Museum one considerably darker than the other, but of general uniform coloring above, the hairs without annulations.

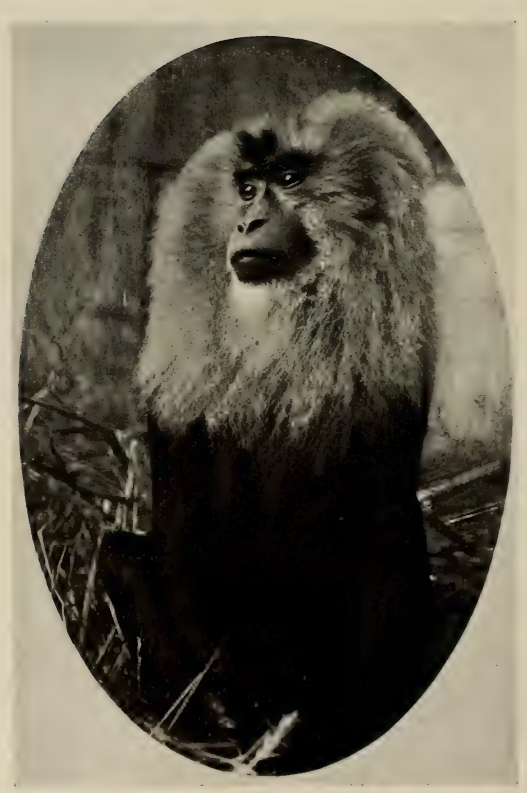
There is a Macaque in the Calcutta Museum, labelled *M. assamensis,* and stated to have come from Assam. It has the top of head, upper parts of body and sides fox red; long black hairs on face; sides of head yellow; arms, hands and sides paler red than body; legs below knees reddish yellow; lower parts of body and inner side of limbs yellowish white; tail pale red above, golden beneath; callosities not large, red. This is a handsome monkey; the colors fox red and golden yellow; the face apparently pale red. It would seem to be too red for P. ASSAMENSIS and nearer the color of P. RUFESCENS, which, however, appears to be a resident of Tenasserim, and not known as from Assam.

The types of Mammals in the Collection of the East Indian Museum were supposed to have been deposited in the British Museum, but after diligent search the type of this species could not be found, and there are no records extant to show it ever was in the latter Institution. Anderson saw it in the Indian Museum when he was in London and gives (l. c.) the following description of it: "The type of *M. assamensis* in the Indian Museum, London, is an adult male. It is a stuffed specimen, but the skull has been removed from the skin and is not in the Museum. This monkey differs from all adult animals of the common monkey of the plains of India, which have come under my observation, in the anterior half wanting the ashy tint which is so characteristic of the adults, and in the hinder portion of the body being in no way rufous. The fur too is almost completely devoid of annulations, and the hair around the face and on the chin is longer than in animals from the plains. The general color of this old specimen may be described as brown, washed over the outer side of the fore-limbs, and more especially between the shoulders and back of the neck with yellowish, which appears in certain lights as pale golden, passing on the upper surface of the head into a pale yellowish brown. The general brownish tint is darkest on the flanks, where it has a fuliginous tinge, and down the front margin of the fore-limbs, over the outer surface of the thighs, the dorsi of the feet and on the tail. The inside of the limbs and the under surface generally are much paler than the upper parts, and have a yellowish tint, inclining to gray. Behind the angle of the mouth, and below and behind the ears and on the chin, the hair is rather long and nearly of the same colour as the under surface, but slightly tipped with blackish. There is a moderately dense line of rather long super-orbital hairs with a pencil of similar hairs extending backwards from the external orbital angle of the frontals. The hair generally is wavy, and on the shoulders and between them above and on the sides of the chest it is much longer than on the hind part of the body, with the exception of the dark hairs on the lower part of the flanks, which are also rather long. The hair on the vertex radiates from a point of about one inch above the level of the superorbital ridge, and a few of the front hairs are directed forwards, but the mass outwards and slightly backwards, which is also the direction of the hairs to the radiating point. There are a few long, black superciliary hairs, also others on the upper lip and skin. The callosities are closely surrounded by the fur. The length of the animal along the curve of the head and back is 26.75 inches, the tail measuring 9¼ inches."

The type of *Macacus problematicus* Gray, in the British Museum is a moderately sized brown monkey without any special characteristics to distinguish it from many others. It is of one uniform tint over the whole exterior portion of the body and limbs, hands and feet, a sepia color becoming yellowish gray on the under parts and inner side of limbs, tail brown, paler than body, some stiff black hairs on the forehead over the eyes. The type was purchased from the Zoological Society, was an immature individual and had lived most of its life in captivity. It is practically impossible to refer this type with certainty to any recognized species, and there is little to be said in defense of a habit of describing individuals from Zoological Gardens, that are immature, have passed most of their lives in captivity, and in the majority of cases with no ascertained locality. The best thing to do with all such specimens is to declare them undeterminable, and strike them out of our list. Such specimens as this type of *M.*



Pithecus rhesus.



Pithecus albibarbatus.

problematicus can never be of use to any one, but can easily become a stumbling block to many. It is placed here as a synonym, as it seems nearest in color to P. ASSAMENSIS among the species of Macaques.

PITHECUS RHESUS (Audebert).

Simia rhesus Audeb., Hist. Nat. Singes et Makis, Fam. II, Sec. I, 1797, p. 5, pl. I; Cuv., Règ. Anim., I, 1817, p. 109; Fisch., Syn. Mamm., 1829, p. 29.

Simia erythræa, Wrinkled baboon, Shaw, Genl. Zool., I, Pt. I, 1800, p. 33.

Inuus rhesus E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 101; Kuhl, Beitr. Zool., 1820, p. 17; Jerd., Mamm. Ind., 1867, p. 11.

Macacus erythræus F. Cuv., Hist. Nat. Mamm., 1819, pl. XXXVIII, juv.; 1821, pl. XXXIX; 1825, pl. XL, ♂; Gerv., Hist. Nat. Mamm., 1834, p. 91, pls. XXXI-XXXVII; I. Geoff., Dict. Class., 1826, p. 538; *Id.* Bélang., Voy., Zool., 1834, p. 59; *Id.* Cat. Primates, 1851, p. 30; Reichenb., Vollständ. Naturg. Affen, 1862, pl. XXIV, figs. 345-348, 354-356; Mivart, Proc. Zool. Soc. Lond., 1865, p. 562; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 112.

Macacus rhesus Desm., Mamm., 1820, p. 66; Less., Man. Mamm., 1827, p. 42; *Id.* Spec. Mamm., 1840, p. 95; Gray, Handb. Mamm. Brit. Mus., 1843, p. 8; Hodg., Proc. Zool. Soc. Lond., 1856, p. 394; Anders., Proc. Zool. Soc. Lond., 1858, p. 512; Reichenb., Vollständ. Naturg. Affen, 1862, p. 100, fig. 358; Hutton, Proc. Zool. Soc. Lond., 1867, p. 951; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 31; Sclat., Proc. Zool. Soc. Lond., 1871, p. 222; Sutton, Proc. Zool. Soc. Lond., 1883, p. 581; Blanf., Proc. Zool. Soc. Lond., 1887, p. 625; *Id.* Fauna Brit. Ind., Mamm., 1891, p. 13; Forbes, Handb. Primates, II, 1894, p. 22; Thos., Proc. Zool. Soc. Lond., 1898, p. 770, (Kuatun, China); Elliot, Cat. Mamm. Field Columb. Mus., F. C. M. Pub., VIII, 1906, p. 567, Zool. Ser.; Pocock, Proc. Zool. Soc. Lond., 1906, p. 558.

Le rhesus F. Cuv., Hist. Nat. Mamm., 1821, Livr. XXVI, pls. ♂, ♀.

Inuus erythræus Wagn., Schreb., Säugth Suppl., I, 1840, p. 142; V, 1855, p. 56, pl. VIIIc.

Papio rhesus Ogilby, Madr. Journ. Litr. Scien., XII, 1840, p. 144.

Macacus (*Pithex*) *oinops* Hodg., Journ. Asiat. Soc. Beng., IX, 1840, p. 1212, fig. p. 1213; X, 1841, p. 908; *Id.* Calc. Journ. Nat. Hist., II, 1842, p. 212; IV, 1844, p. 285; *Id.* Ann. Mag. Nat. Hist., VIII, 1st Ser., 1842, p. 315, fig.

Macacus oinops Gray, Handb. Mamm. Brit. Mus., 1843, p. 8; Reichenb., Vollständ. Naturg. Affen, 1862, p. 141, pl. XXIV, fig. 367.

Pithecus (*Macacus*) *erythræus* Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 116-120.

Macacus (*Pithecus*) *erythræus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 137, figs. 345-348, 354-356.

Macacus (*Pithecus*) *geron* Reichenb., Vollständ. Naturg. Affen, 1862, p. 139, pl. XXIV, fig. 351?

BENGAL MACAQUE.

Type locality. Unknown.

Geogr. Distr. Himalayas to the Godaveri River, Northern India; Cashmere at 5,000 feet elevation; Jako Hill, Simla, 8,500 feet, (introduced); Nepal, (Hodgson); Guzerat, Central Provinces; in Bengal and Northern Circars, and on the west coast near Bombay. Replaced in Assam and Burma by M. ASSAMENSIS, although Anderson states, (Zool. Yunnan, pp. 56 and 57), that he obtained at Momien and the Hotha valley specimens of Macaques closely resembling P. RHESUS, and another was given to him by Dr. Marfels from Burma, but without locality. It is probable, however, that these were really P. ASSAMENSIS.

Color. Head, and upper parts of body to middle of back bistre with a grayish tinge speckled with buff, the hairs being purplish brown banded with buff on apical half; this color grades into orange red on lower back, rump and thighs; arms gray speckled with buff; under parts and inner side of limbs grayish white; tail short, Prout's brown above, yellowish beneath; face and ears flesh color; callosities red.

Measurements. Total length, 930; tail, 330; foot, 145. Skull: total length, 145.4; occipito-nasal length, 115.5; Hensel, 108.3; zygomatic breadth, 96.3; intertemporal width, 50; width of braincase, 67.6; median length of nasals, 34.2; palatal length, 60; length of upper molar series, 37; length of mandible, 118; length of lower molar series, 49.2.

The type of Hodgson's *M. oinops* is in the British Museum, a skin in fair condition; the skull showing it to be a young adult male. It is now a dark brown, some hairs on head and shoulders slightly speckled with buff, and the thighs beginning to show the orange red hue of P. RHESUS; outer side of arms and legs blackish brown; under parts whitish gray. The skin was originally mounted and has been exposed in the case for over half a century, and it is probable that the accumulated dust during that length of time has darkened the colors considerably. Another of Hodgson's specimens also marked *M. oinops* is blackish brown throughout without any orange coloring. It is very evident that these examples have not assumed the adult pelage, only one exhibiting a change to the coloring of P. RHESUS, and the probability is they are of that species. Anderson figures a skull of Hodgson's *oinops* as the type, and states there was no skin, but the two skulls recorded as types now in the Museum have the skins also, and are examples, as I have shown, not in mature dress.

The name *erythræa* has been applied to this species as 'Schreber pl. VIII.' As shown by Blanford, (Proc. Zool. Soc. Lond., 1887, p. 625), no plate with that number or any other with the name *Simia erythræa* was ever published by Schreber. If it had been it would have antedated RHESUS Audebert, published in 1797. There is no such plate in vol. I, 1775, nor in the additional plates belonging to that volume, in vol. III, p. 590, 1778, nor in vol. IV, p. 636, 1792. The first appearance of such a plate is in Wagner's Supplement I, 1840, pl. VIIIc. Schreber's original plate VIII, was the Mandrill, PAPIO SPHINX (Linn.). The earliest use of the name *Simia erythræa* was by Shaw, Gen. Zool., I, 1800, p. 33, and the reference given is "Schreb. Suppl." without number of plate or page. Dr. Blanford's theory is that a plate "was probably distributed to a few naturalists, but not issued in such a way as to give validity to the title." (!)

This is the common Macaque of Northern India, and although Blanford (l. c.) says it is not held sacred by the Hindus, it certainly is venerated by them, and in the temple of Hounuman, the Monkey God at Benares, large numbers of this species are kept and given the freedom of the building and become very bold and impudent. Their numbers increased so greatly at one time in this temple that the government was obliged to interfere, and as their destruction would have been resented by the natives, a compromise was effected, and all but about two hundred were carried into the jungle and set free. Doubtless many found their way back to the more comfortable quarters in the city. When young it is readily tamed and learns easily various tricks. Full of mischief and curiosity it often becomes a nuisance about the towns, and when adult is frequently ill-tempered, even savage. It seeks cultivated tracts and the borders of tanks and streams, and Blanford states that the wild monkeys go in herds often of considerable size, and have but little fear of man, (probably because they are so rarely molested), and feed on spiders and many kinds of insects especially Orthoptera and Lepidoptera, besides fruit and seeds. Among themselves they are very quarrelsome, constantly fighting and screaming or teasing each other. They have no fear of water and swim well.

There are remarkably few examples of this species in the Museums of the world; the animals being considered sacred in India, makes their capture a difficult matter; for the natives would certainly resent the killing of one of these monkeys, and so comparatively few are taken by Collectors.

PITHECUS BREVICAUDUS Elliot.

Pithecus brachyurus (nec H. Smith), Elliot, Ann. Mag. Nat. Hist., IV, 1909, 8th Ser., p. 251.

Macacus erythræus (nec Cuv.), Swinhoe, Proc. Zool. Soc. Lond., 1870, p. 226.

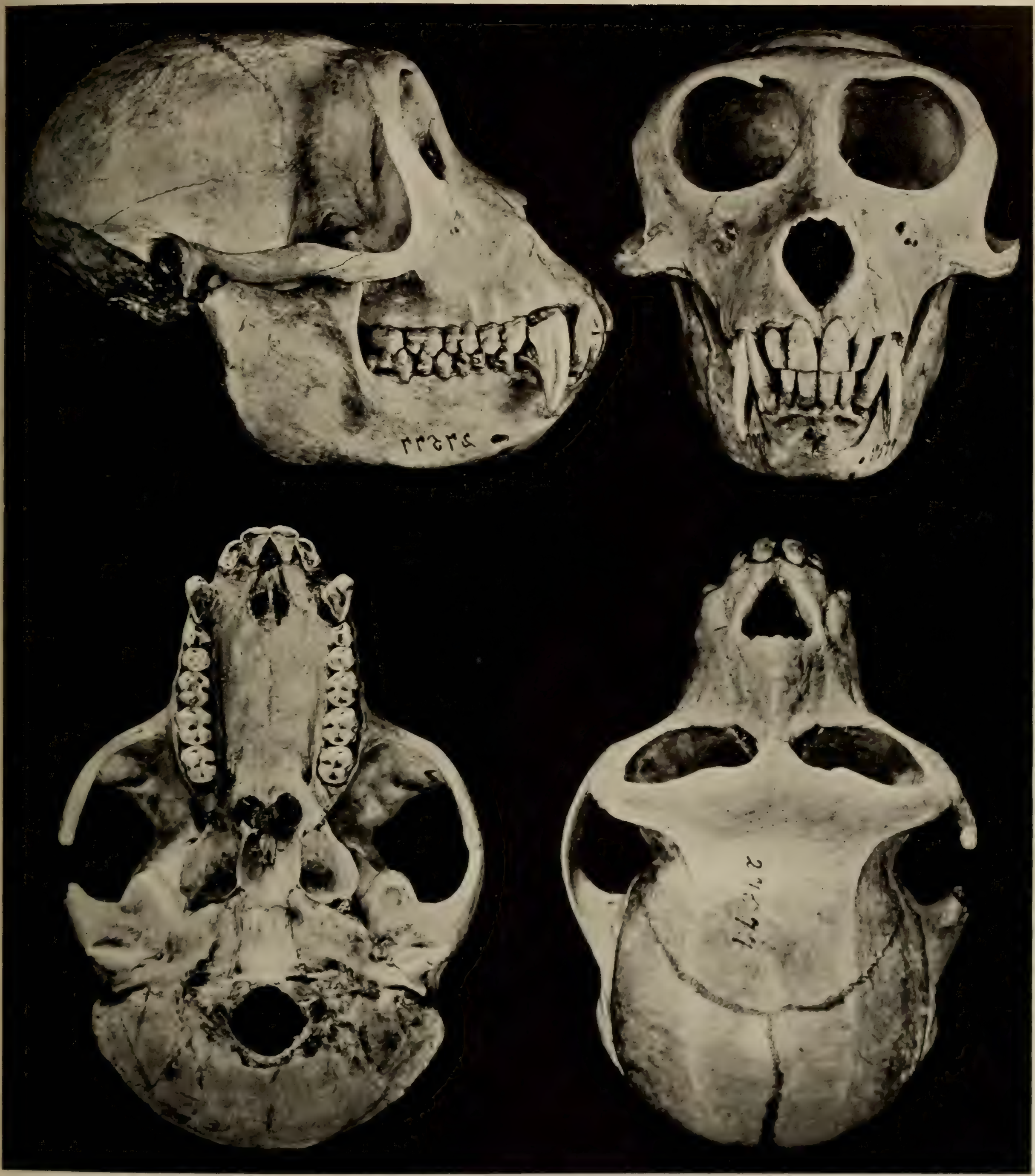
ISLAND OF HAINAN MACAQUE.

Type locality. Island of Hainan. Type in American Museum of Natural History, New York.

Color. Top of head, nape, hind neck, upper parts of body to rump speckled black and russet; rump dark orange rufous; arms and hands speckled blackish and buff, hairs gray on basal half and this color gives a dominant tone to the rest; flanks and legs ochraceous, unspeckled; long, stiff, black hairs on superciliary line; sides of head yellowish gray; some black hairs on cheeks forming a short line beneath eyes; face flesh color, becoming blackish on lips which are sparsely covered with short white hairs; chin, throat and under parts of body to anal region yellowish white; hairs about scrotum and anal region orange and rufous like rump; inner side of legs yellowish, feet brownish gray; tail above speckled blackish brown and ochraceous, beneath paler. Ex type American Museum Natural History, New York.

Measurements. Total length, 730; tail, 220; foot, 135. Skull: total length, 116.1; occipito-nasal length, 100; intertemporal length, 46.3; breadth of braincase, 60.6; Hensel, 78.3; zygomatic width, 81.8; median length of nasals, 25; palatal length, 42.3; length of upper canines, 21; length of upper molar series, 29.8; length of mandible, 82.2; length of lower molar series, 36.6. Ex type American Museum Natural History, New York.

This Macaque, while having a general resemblance to P. RHESUS of India, differs in various ways from that species. The tail is much



PITHECUS BREVICAUDUS.

SIDE VIEW REVERSED.

No. 27577 Amer. Mus. Nat. Hist. Coll. ⅘ Nat. Size.

shorter, and the coloring, especially on the rump and about scrotum, much brighter. The skull, however, differs greatly from that of P. RHESUS. The orbital ridge is rounded, (not depressed), and flattened, and consequently there should be an absence of the scowling look so often seen in adults of the Indian species; another character that instantly attracts the eye is the greater width and lateral swellings of the rostrum of P. RHESUS, the Hainan species having a rather long rostrum for its width, and the sides descending rather abruptly from the nasals. The orbits of P. BREVICAUDUS are circular, those of the other species oblong; the braincase of the Hainan Macaque is somewhat shorter and more bulging posteriorly, and the palate is deeper and narrower, and the bullæ shorter and wider; tooth rows of upper jaw nearly straight and the teeth much smaller; mastoid width much less, and the mandible has a proportionately greater depth and less expansion at coronoid process. This comparison is made between two skulls of males of about equal age.

Several specimens of this Macaque were received by the American Museum of Natural History in New York, in a collection from the Island of Hainan. On examining the examples in the Museum I was satisfied of their distinctness from P. RHESUS but not having any skulls of that species for comparison I decided not to describe the form at that time, but to wait until a comparison could be made. Dr. Allen selected three, and the Museum forwarded them to me in London, and after comparing these with skins and skulls of P. RHESUS in the British Museum, the distinctness of the Hainan Macaque was demonstrated.

The term *brachyurus,* having been previously employed for an albino Macaque, possibly for P. NEMESTRINUS, by Hamilton Smith in Jardine Nat. Libr., I, p. 103, pl. I, cannot be retained for the present species and in place of it I propose BREVICAUDUS.

Mr. Swinhoe states (l. c.): "About the jungles of Nychow, (S. Hainan), Monkeys were very common. On our landing, abreast of the ship we saw a large party of them on the beach, which at once retired into a grove above high water mark. We watched them running along the boughs of the trees and jumping from branch to branch. The discharge of a fowling piece soon made them scurry away into the thicket; but every now and again their heads would appear from the higher bushes watching the movements of the enemy. At last when they observed that our presence implied actual danger to themselves, they climbed the hills and posted themselves about conspicuous rocks, where they chattered and grunted, out of danger. Their cries were very like those of M.

CYCLOPSIS Mihi, of Formosa. In the neighborhood of Nychow city we found a large number of them in a thick wood that surrounded the hovel of a *Le* native, and one of our party succeeded in knocking over a fine female with a cartridge. Its irides were yellowish brown tinged with green. Eyes somewhat oval. Face long, narrow, with a somewhat projecting mouth; the skin tinged with reddish yellow, and sprinkled with short, silky, buff-colored hair, longer and coarser on the lips, chin and cheeks. A few long black hairs were scattered on the center of the forehead and on the space beneath the eyes. The ear was well developed and thinly clothed with hair."

Subgenus Vetulus.

Tail over 12 inches, but not as long as head and body.

PITHECUS ALBIBARBATUS (Kerr).

Ouanderou Buff., Hist. Nat., XIV, 1766, pp. 169, 174, pl. XVIII.

Simia silenus (nec Linn.), Schreb., Säugth., 1775, p. 87, pl. XI; Blanf., Proc. Zool. Soc. Lond., 1887, p. 620.

Simia (*Cercopithecus*) *veter albibarbatus* Kerr, Anim. Kingd., 1792, p. 64, No. 27.

Simia (*Cercopithecus*) *silenus albibarbatus* Kerr, Anim. Kingd., 1792, p. 64, No. 28.

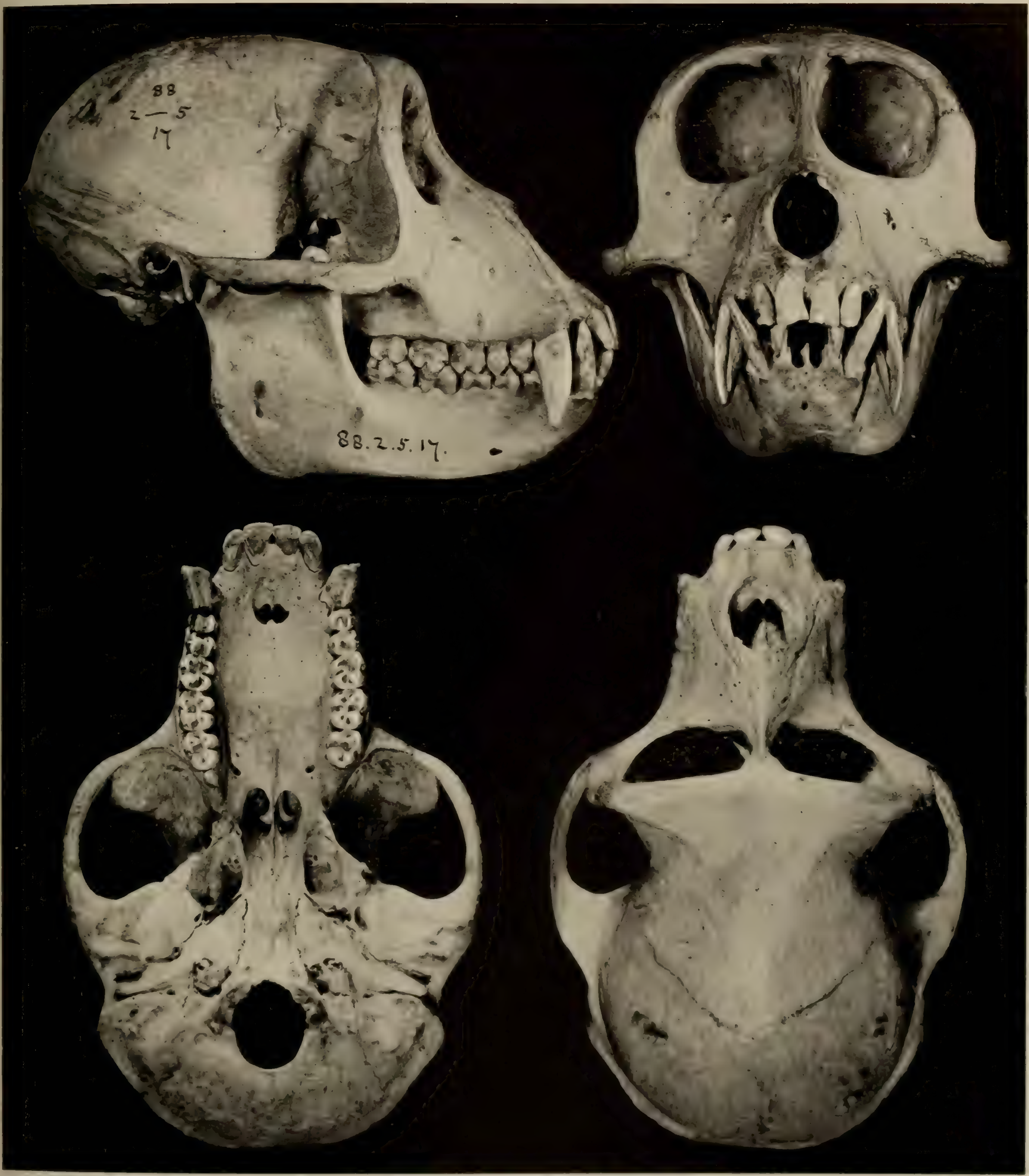
Simia ferox Shaw, Mus. Leverian., II, 1793, p. 69; *Id.* Genl. Zool., I, Pt. I, 1800, p. 30, pl. XVI; Blanf., Proc. Zool. Soc. Lond., 1887, p. 623.

Simia leonina Shaw, Genl. Zool., I, Pt. I, 1800, p. 34, pl. XVII.

Papio silenus (nec Linn.), E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 102; Kuhl, Beitr. Zool., 1820, p. 18.

Macacus silenus (nec Linn.), Desm., Mamm., 1820, p. 63; F. Cuv., Hist. Nat. Mamm., 1822, pl. XLIV; E. Geoff., Cours Hist. Nat. Mamm., 1828, p. 33, 8me Leçon; Less., Man. Mamm., 1827, p. 95; I. Geoff., Bélang., Voy., 1834, p. 51; Less., Spec. Mamm., 1840, p. 93; Blyth, Journ. Asiat. Soc. Beng., XIII, 1844, p. 476; XVI, 1847, p. 1272; XXVIII, 1859, p. 280; I. Geoff., Cat. Primates, 1851, p. 30; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 109; Anders., Exped. Yunnan, Zool., 1878, p. 93; Blanf., Faun. Brit. Ind., Mamm., 1888-91, p. 16; Forbes, Handb. Primates, II, 1894, p. 18.

Inuus (*Maimon*) *silenus* (nec Linn.), Wagn., Schreb., Säugth. Suppl., I, 1840, p. 141, pl. XI B.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PITHECUS ALBIBARBATUS.

No. 88.2.5.17. Brit. Mus. Coll. ⅘ Nat. Size.

Cynocephalus silenus (nec Linn.), Wagn., Schreb., Säugth. Suppl., V, 1855, p. 62.

Pithecus (*Macacus*) *silenus* (nec Linn.), Dahlb., Stud. Zool. Fam. Reg. Natur., fasc. I, 1856, pp. 106, 119.

Vetulus silenus (nec Linn.), Reichenb., Vollständ. Naturg. Affen, 1862, p. 125, pl. XXII, figs. 321-323.

Silenus veter Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 32.

Inuus silenus Jerd., Mamm. Ind., 1874, p. 10.

LION-TAILED MACAQUE.

Type locality. "Egypt."

Geogr. Distr. Southern India; the western Ghats below Goa to Cape Comorin. Not found in Ceylon.

Genl. Char. Face surrounded by very long hairs, meeting under the chin forming a kind of ruff; tail slender, tufted.

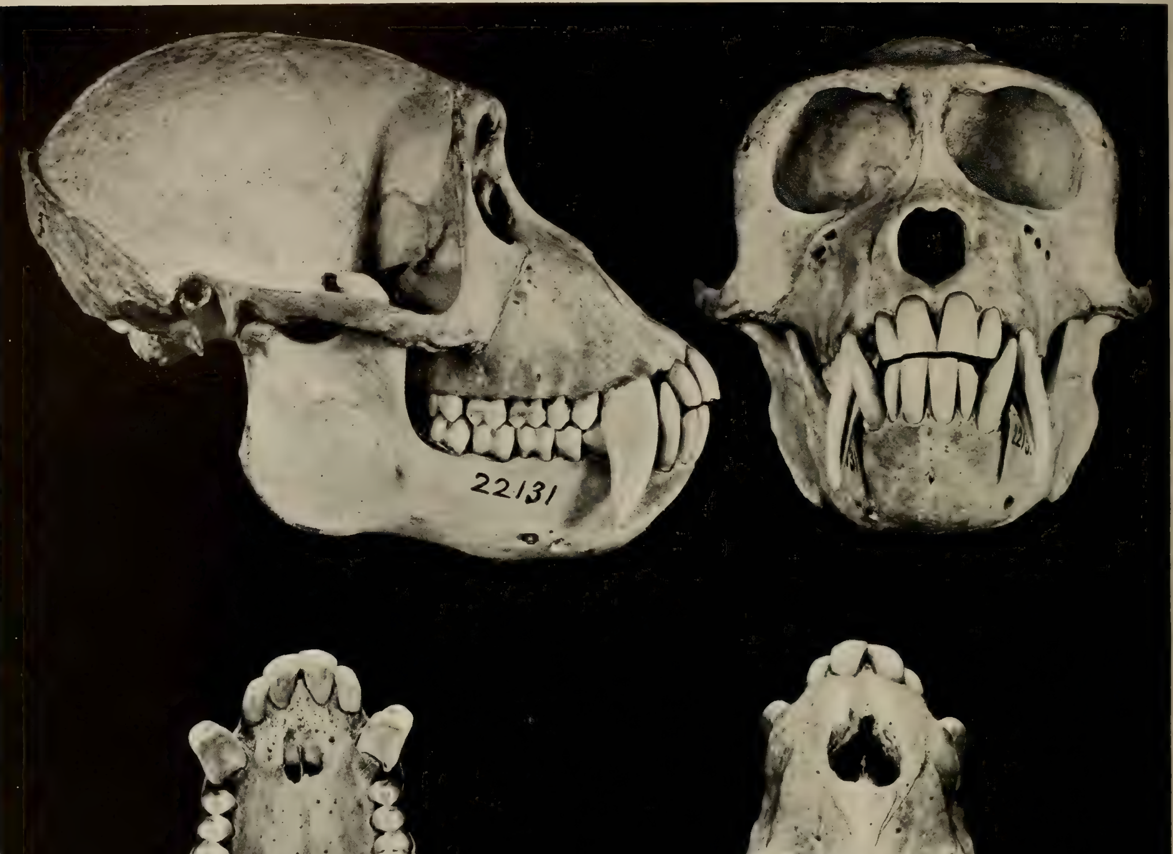
Color. Long hairs about face and on throat between a wood brown and drab gray, entire rest of pelage and tail black.

Measurements. Total length, 910; tail, 380; foot, 170, (skin). Skull: occipito-nasal length, 96.6; Hensel, 84.5; zygomatic width, 89.9; intertemporal width, 40.8; palatal length, 45.2; median length of nasals, 29.4; length of upper molar series, 30.7; length of mandible, 83.1; length of lower molar series, 38.9.

Considerable confusion has existed regarding the proper name to be given to this species, and Dr. Blanford (l. c.) has shown that the one given by Linnæus (l. c.) cannot be applied to it. The 12th edition of the Systema Naturæ, 1766, has generally been, until comparatively lately, the starting point for nomenclature by Naturalists, and in this work, the Malabar Macaque is certainly not described, for there Linnæus states his *S. silenus* has, *"caudata barbata nigra, barba nigra prolixa,"* which does not answer for this species which has not a *black* beard. In the 10th edition 1758, another description is given for the same animal, *"caudata barbata, copore nigro, barba nivea prolixa,"* which is much nearer the appearance of the monkey called *silenus* by nearly all the writers. In both editions the first citation is Alp. Ægypt, 242? Linnæus, as is most probable, never saw a specimen of this monkey, and his description was taken from that of Alpinus which was founded upon a drawing. But Alpinus says his monkey had a *black* beard, and Linnæus noticing the discrepancy between his diagnosis and that of Alpinus cites his work with a query.

Alpinus gives three figures as described by Blanford, two on plate XX and one on plate XXI. Figure one on the first plate "represents an animal with a thin beard, below the chin alone, and with a rather long tail; figure two shows a monkey drawn so as to resemble a lion as much as possible." The figure on the next plate "represents an animal with a short tail, hairy body and long hair all around the head." Whatever species these figures and description were intended to represent, it is certain they will not answer for the Malabar Monkey, and Linnæus himself was so little satisfied with his description in the 10th edition that he changes it to the 12th so as to make it read *"barba nigra prolixa"* and thus make it accord with that of Alpinus. Linnæus characterizes his *S. silenus* in this manner: Size equal to the largest Baboon; beard white in one edition, black in the other, and the animal came from Egypt in the 12th edition, but from Asia, Ceylon and Java in the 10th edition. Here then we have two writers, neither of whom ever probably saw the monkey they described, one of whom, Alpinus, states that his species has a black beard, and the other, Linnæus, trying to diagnose the same animal, says in the first place the beard is white and in the second place it is black. It is not at all likely that it was the Malabar Monkey to which either Author referred, as neither the size nor the habitats given answer for the species, and Linnæus at all events, had a very foggy idea of its appearance. Considering, therefore, the absolute uncertainty as to what the *S. silenus* Linn., really was, it seems best to regard it as undeterminable and select the name that was, without question, bestowed upon the species, and this appears to be SIMIA ALBIBARBATUS Kerr, (l. c.). It is also the *Ouanderou,* or *Lowando* of Buffon, (l. c.) and his figure fairly represents it, except the tail appears to have been reduced more than half, the specimen probably having lost the greater portion of its length. The name has been misapplied, as *Wanderou,* or *Ouanderou* properly belongs to PRESBYTIS CEPHALOLOPTERA of Ceylon, in which island the P. ALBIBARBATUS is not found, for there is no species of monkey there with a white beard.

Jerdon, (l. c.) says of this species that "it is a native of the more elevated forests of the Western Ghats of India from N. L. 14° to the extreme south, but most abundant in Cochin and Travancore. It is said to occur still farther north up to Goa, N. L. 15½, but I have no authentic information of its occurrence so high. It frequents the most dense and unfrequented parts of the forest, always, as far as I have observed it, at a considerable elevation, and I had often traversed the Malabar forests before I first fell in with it. This was at the top of the Cotiady pass, leading from Malabar into the Wynaad. I have since met with it in several other localities, but always near the crest of the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PITHECUS SINICUS.

No. 22131 U. S. Nat. Mus. Coll. ⅘ Nat. Size.

Ghats. It occurs in troops of from twelve to twenty or more, and those I observed were exceedingly shy and wary. It is not to my knowledge often caught in the Wynaad, and most of the individuals seen in captivity appear to be taken in Travancore. In its Nature it is more sulky and savage than the next species, (P. RHESUS), and is with difficulty taught to perform any feats of agility or mimicry."

Subgenus Zati.

Hairs on crown radiating from a point in the center.

PITHECUS SINICUS (Linnæus).

Simia sinica Linn., Mant. Plant., 1771, p. 52; Bodd., Elench. Anim., 1784, p. 60; Gmel., Syst. Nat., I, 1788, p. 30; Audeb., Hist. Nat. Singes et Makis, 1797, Fam. IV, Sec. III, p. 17, pl. II; Shaw, Genl. Zool., I, Pt. I, 1800, p. 50; Fisch., Syn. Mamm., 1829, p. 27; Cuv., Reg. Anim., 1829, p. 95.

Cercopithecus sinicus Erxl., Syst. Reg. Anim., 1777, p. 41, (Part.); Zimm., Geog. Gesch., II, 1780, p. 193; Kuhl, Beitr. Zool., 1820, p. 13.

Cercocebus radiatus E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 98.

Pithecus radiatus Desm., Nouv. Dict. Hist. Nat., Mamm., XVIII, 1817, p. 325.

Le Toque F. Cuv., Hist. Nat. Mamm., Livr. XVIII, 1820, pl.; 2me ed., 1833, p. 89, pl. XXX.

Cercopithecus radiatus Kuhl, Beitr. Zool., 1820, p. 13.

Macacus radiatus F. Cuv., Hist. Nat. Mamm., Livr. XVIII, 1820, pl. XXXIII; Desm., Mamm., 1820, p. 64, (Part.); Sykes, Proc. Zool. Soc. Lond., 1831, p. 99; I. Geoff., Bélang., Voy., Zool., 1834, p. 54; Less., Spec. Mamm., 1840, p. 89; Gray, Handb. Mamm. Brit. Mus., 1843, p. 7; Blyth, Journ. Asiat. Soc. Beng., XIII, 1844, p. 476; Horsf., Cat. Mamm., E. Ind. Co. Mus., 1851, p. 18; Jerd., Mamm. Ind., 1867, p. 12.

Inuus (Cercocebus) sinicus Wagn., Schreb., Säugth. Suppl., I, 1840, p. 139, pl. XXIII.

Macacus sinicus Blyth, Journ. Asiat. Soc. Beng., XVI, 1847, p. 1272; I. Geoff., Cat. Primates, 1851, p. 26; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 28; Anders., Exped. Yunnan, Zool., 1878, p. 28; Blanf., Faun.

Brit. Ind., Mamm., 1891, p. 23; Forbes, Handb. Primates, II, 1894, p. 35; Pocock, Proc. Zool. Soc. Lond., 1906, p. 558.

Inuus (Macacus) sinicus Wagn., Schreb., Säugth. Suppl., V, 1855, p. 56.

Cynamolgos (Zati) sinicus Reichenb., Vollständ. Naturg. Affen, 1862, p. 130, pl. XXIII, figs. 327-329.

Cynamolgos (Zati) audeberti Reichenb., Vollständ. Naturg. Affen, 1862, p. 132, pl. XXIII, fig. 331.

Cercocebus sinicus Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 99.

BONNET MACAQUE.

Type locality. Bengal.

Geogr. Distr. Southern India; north, possibly, to the Godaveri River, and on the west to Bombay.

Genl. Char. Face naked; forehead sparsely haired, the hair parted in the center; hair on crown radiating from a central point in all directions but not falling over forehead; hairs on upper parts moderately long; ears naked, prominent; tail nearly as long as the body.

Color. Male. Hairs on head and upper parts brownish olive on basal half, remainder banded with dark brown and buff, giving a reddish brown hue to these parts; outer side of limbs olive gray; under parts and inner side of limbs yellowish white; hands and feet similar to the limbs but darker in hue; tail above darker than the back, being blackish brown at base graduating into bistre towards the tip, beneath yellowish white like under parts.

Female is somewhat lighter, one before me from Travancore, British Museum Collection No. 19. a. being an almost uniform olive brown above, with but slight evidence of bands on the hairs; limbs paler, uniform olive grayish brown; hands and feet blackish brown; under parts, body and limbs yellowish white; tail above like back, beneath yellowish white. Face and callosities flesh color.

Measurements. Total length, 800; tail, 340; foot, 115, (skin). Skull: total length, 108; occipito-nasal length, 87.3; Hensel, 67; intertemporal width, 43.2; zygomatic width, 81; breadth of braincase, 61.1; nasals broken; palate broken; length of upper molar series, 29; length of mandible, 77.6; length of lower molar series, 38.

This species and its near relative P. PILEATUS are readily recognizable among the Macaques by the curious manner in which the hair on the crown of the head radiates from a common center. It is a native of southern India, its limits being Bombay on the west and the Godaveri River on the east.

PITHECUS PILEATUS (Kerr).

Simia (*Cercopithecus*) *sinicus pileatus* Kerr, Anim. Kingd., 1792, No. 45.

Simia sinica (nec Linn.), Schreb., Säugth., 1775, p. 108, pl. XXIII.

Le Bonnet Chinois Audeb., Hist. Nat. Singes et Makis, 1797, Fam. IV, Sec. II, pl. II.

Simia pileata Shaw, Gen. Zool., I, Pt. I, 1800, p. 53; Fisch., Syst. Reg. Anim., 1829, p. 24.

Cercopithecus pileatus E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 94; Kuhl, Beitr. Zool., 1820, p. 11; Desm., Mamm., 1820, p. 57.

Cercocebus sinicus (nec Linn.), E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 98.

Macacus sinicus (nec Linn.), Desm., Mamm., 1820, p. 64; F. Cuv., Hist. Nat. Mamm., 1825, pl. XXXIV; Less., Man. Mamm., 1827, p. 42; Fisch., Syn. Mamm., 1829, p. 27; I. Geoff., Bélang., Voy., Zool., 1834, p. 55; Less., Spec. Mamm., 1840, p. 89; Gray, Handb. Mamm. Brit. Mus., 1843, p. 7; Kelaart, Faun. Zeyl., 1852, p. 8.

Macacus pileatus Blyth, Journ. Asiat. Soc. Beng., XVI, 1847, p. 1272; I. Geoff., Cat. Primates, 1851, p. 27; Tenn., Hist. Ceyl., 1861, p. 130; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 29; Anders., Exped. Yunnan, Zool., 1878, p. 91; Blanf., Faun. Brit. Ind., Mamm., 1891, p. 24; Forbes, Handb. Primates, II, 1894, p. 33.

Inuus pileatus Wagn., Schreb., Säugth. Suppl., V, 1855, p. 55.

Pithecus (*Macacus*) *pileatus* Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 117, 119.

Cynamolgos (*Zati*) *pileatus* Reichenb., Vollständ. Naturg. Affen, 1862, p. 131, fig. 330.

Cercocebus pileatus Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 98.

THE TOQUE MACAQUE.

Type locality. Ceylon.

Genl. Char. Similar to P. SINICUS (Linn.), but redder.

Color. Black band over eyes and on temples, some hairs quite long; a bright reddish band encircles top of head at base of long hairs; these last are orange on front portion, and project over the forehead; dull brown on the remaining part on sides and rear; sides of neck behind ears yellowish white, as are also the throat and under parts of body; back of neck, upper parts and sides of body dark reddish brown; arms and hands ochraceous; thighs reddish, paler on leg below knees;

feet yellowish; tail very long, dusky above, beneath pale yellowish inclining to ochraceous at base; face bare, red. Ex specimen from Ceylon in Calcutta Museum.

Top of head and upper part of body, thighs and tail dark brown, blackish on base of tail; sides of head, outer side of arms and legs below the knee brownish gray; under parts, inner side of limbs and under side of tail grayish white. Face, flesh color. Tail very long. Ex type *M.* SINICUS Geoff., (nec Linn.), in Paris Museum = P. PILEATUS (Kerr).

Measurements. Total length, 977.90; tail, 431.80; foot, 127.

Two specimens in Paris Museum of this species are both young about half grown, and both marked "type." They are probably those described by E. Geoffroy.

This species is found only in the Island of Ceylon. The name is usually attributed to Shaw (l. c.) but Kerr had conferred the same name upon it (l. c.) eight years previously.

Subgenus Neocebus.

Hairs on head not radiating from a central point.

PITHECUS RESIMUS (Thomas and Wroughton).

Macaca resima Thos. and Wrought., Ann. Mag. Nat. Hist., III, 1908, 8th Ser., p. 381.

Type locality. Tasikmalaja, West Java. Altitude 1,145 feet. Type in British Museum.

Genl. Char. Size small, tail about as long as the body. Skull with rostrum twisted to one side, abnormal in shape.

Color. Top of head and upper parts isabella color speckled with buff; the hairs being hair brown with apical half banded with buff; limbs, hands and feet gray, arms darker than legs and hairs white tipped; cheeks and sides of head below ears, inner side of limbs, and under parts grayish white; black line across forehead and on sides of crown, formed by the black tips of the hairs; tail above black for basal half grading into gray, beneath gray. Ex type British Museum.

Measurements. Total length, 880; tail, 360; foot, 135; ear, 42, (Collector). Skull: total length, 121.1; occipito-nasal length, 95.3; Hensel, 89.1; zygomatic length, 75.8; intertemporal width, 40.1; breadth of braincase, 54.3; palatal length, 54.3; median length of nasals, 14.5; length of mandible, 91.8; length of lower molar series, 40.9. Ex type British Museum.

This is a rather small Macaque with soft moderately long hair, and tail nearly the length of the body. It probably represents a distinct species, certainly is not the same as P. MORDAX, for besides the general smaller size, the teeth are larger. But the rostral portion of the skull is not normally shaped, having a twist to the left, not from having been injured early in life, there is no evidence of that, so the animal was probably born with the rostrum out of plumb, so to speak. The type is unique, and it is very desirable that other specimens should be procured.

PITHECUS VALIDUS Elliot.

Pithecus validus Elliot, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 252.

Type locality. Cochin China, exact locality unknown. Type in British Museum.

Genl. Char. Body stout, heavy; limbs short, tail not quite as long as the body. Skull with facial region almost as long as the braincase; sagittal crest present; rostrum longer than wide; palate long, narrow; tooth rows straight; second upper molar largest; last lower molar with prominent posterior cusp; mandible heavy, comparatively massive for its total length; canines stout.

Color. Crown, middle of nape, line over eyes, and line on sides of head, black speckled with buff; rest of crown and entire upper parts, Prout's brown washed with olive and grading to raw umber on sides of arms, all speckled with buff; outer side of arms from elbows and hands blackish speckled with buff; outer side of thighs olive speckled with buff; legs, rump, and below knees, grayish olive, buff speckled; side of head and neck olive gray; under parts and inner side of limbs grayish white; feet olive brown speckled with buff; tail above black on basal half grading into blackish brown on remainder, beneath pale yellowish olive; face flesh color. Ex type British Museum.

Measurements. Total length, 1,030.3; tail, 365; foot, 125. Skull: total length, 125.3; occipito-nasal length, 103.6; Hensel, 84.9; zygomatic width, 82.5; facial length, 78.9; width of braincase, 57; greatest width of rostrum, 38; median length of nasals, 35.5; palatal length, 50.7; length of upper molar series, 30.2; length of mandible, 93.2; length of lower molar series, 36.9; depth of jaw beneath second molar, 23.8. Ex type British Museum.

The unique type of this very unusually colored Macaque is stated to have come from Cochin China, no particular locality in that country specified. In its peculiar brown and olive yellow speckled fur it resembles somewhat in color the long-tailed species P. IRUS Cuv., of the Malay Peninsula, Burma, etc., but is a much more powerful animal than that species, has no reddish brown on the head, and a much shorter tail. In fact it does not closely resemble any species of Macaque with which I am acquainted.

PITHECUS ALACER Elliot.

Pithecus alacer Elliot, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 253.

Type locality. Bliah, on the northern point of Koendoer Island. Type in British Museum.

Genl. Char. General color much paler than the examples from Singapore and Bintang Islands, more approaching but still paler than those from Karimon Island. Skull and teeth more like that of the dark Macaque from Singapore Island. Fur long, soft; tail as long as body. Tooth rows straight. Flesh colored patch on eyelids and between eyes.

Color. General color hazel on dorsal region grading to raw umber or tawny olive on sides, the hairs on back being gray at base, then blackish brown and then banded with black and tawny ochraceous, while the hairs on sides are gray banded with ochraceous buff; the hairs on head and nape are black at base, then orange ochraceous and tipped with black; narrow line above eyes grizzled gray; numerous stiff black hairs behind the gray line almost forming a black line, the longest hairs standing out from the head on each side; face and cheeks covered with very short gray hairs; sides of head yellowish white, hairs long and directed forward and upward; upper side of arms and hands cream buff, the hairs being purplish with cream buff tips; upper side of thighs like back, rest of legs yellowish gray; feet olive brown; under parts and inner side of limbs yellowish white; tail above black speckled with white for three fourths the length, and then grading into hair brown, tuft at tip bistre; beneath pale reddish brown; eyelids and patch over eyes flesh color. Ex type British Museum.

Measurements. Total length, 794; tail, 361; foot, 125; ear, 33, (Collector). Skull: total length, 110.6; occipito-nasal length, 92.7; Hensel, 72.7; intertemporal width, 41.1; zygomatic width, 72.8; greatest width of braincase, 58; palatal length, 73.5; median length of nasals, 24.8; length of upper molar series, 36.1; length of mandible, 79; length of lower molar series, 33. Ex type British Museum.

This Macaque exhibits an entirely differently colored pelage from the Singapore species, and one much nearer to the Karimon and Sumatra forms, while the skull is nearer in its characters to the Singapore Macaque than to those species living on the neighboring islands. It is a reddish brown animal, duller in hue than either the Karimon or Sumatra Macaques. The affinities of the monkeys from these various islands is rather difficult to understand, and why their coloring should be similar in Koendoer and the islands to the south as far as Sumatra, and the cranial characters should be nearly alike with the Singapore species, separated as it is by intervening islands, inhabited by an allied but different form. It would be practically useless to theorize upon this condition of things; but the animals are probably in a process of change influenced by their insular habitats, though as these islands are but short distances apart, it is difficult to appreciate how great such influences may be. At present we only know that differences do exist of such importance as to compel us to regard the individuals from various islands as possessing characters so unreconcilable as to prevent us from considering them all as belonging to one species.

PITHECUS KARIMONI Elliot.

Pithecus karimoni Elliot, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 254.

Type locality. Monos, eastern coast of the Island of Karimon. Type in British Museum.

Genl. Char. Similar in color to P. FASCICULARIS of Sumatra, and skull characters nearer to the skull of that species than to either of those of the species from Koendoer or Singapore, its nearer neighbors. Facial portion of skull shorter than braincase; teeth large; tooth rows very slightly curved; second and third molars much larger than first in both upper and lower rows; orbital ridge broad and long; rostrum short and broad; braincase broad and rounded. Pelage moderately long, smooth; tail about equal in length to body. Forehead above eyes to hair flesh color.

Color. Male. General hue tawny ochraceous, reddest on head and neck, dorsal regions darkest and becoming more yellow on the sides; the hairs on back being purplish gray at base, then banded with tawny ochraceous and black, and the hairs on sides yellowish gray banded with white; outer side of arms grizzled gray, hairs being gray banded with black and cream buff; hands and fingers black covered with yellowish white hairs; outer side of thighs like back, legs bluish gray; under parts and inner side of limbs grayish white; tail grizzled black and white above, brownish gray beneath; feet brownish gray. Young females are lighter in color, some a pale reddish hue. Ex type British Museum.

Measurements. Total length, 906; tail, 432; foot, 152; ear, 35, (Collector). Skull: total length, 111.6; occipito-nasal length, 92.5; Hensel, 75.2; zygomatic width, 76.9; intertemporal width, 38.7; width of braincase, 54.7; greatest width of rostrum, 38.4; length of rostrum, 40; palatal length, 41.7; median length of nasals, 17.5; length of upper molar series, 27.7; length of mandible, 79.7; length of lower molar series, 35.6. Ex type British Museum.

This Macaque while resembling in color of pelage its relative from Koendoer next to it on the south, agrees in its cranial characters with those of P. FASCICULARIS from Sumatra; a rather inexplicable fact in both the cases of this species and the one from Koendoer, skipping the island nearest to them, and agreeing, in the cranial characters, more nearly with the species farthest from them on the south and north.

PITHECUS FUSCUS (Miller).

Macacus fuscus Miller, Proc. U. S. Nat. Mus., XXVI, 1903, p. 476.

SIMALUR ISLAND MACAQUE.

Type locality. Simalur Island, off northwestern coast of Sumatra. Type in United States National Museum.

Genl. Char. Tail long, nearly as long as the head and body. Skull small.

Geogr. Distr. Simalur and Lasia Islands.

Color. Head, upper parts of body, and outer side of limbs blackish brown annulated with wood brown, the head and limbs appearing lighter than body; base of hairs drab; under parts and inner side of limbs grayish white; tail above like back, beneath grayish white; hands and feet blackish brown annulated with wood brown. Ex type United States National Museum.

Measurements. Total length, 920; tail, 450; foot, 125. Skull: total length, 122; occipito-nasal length, 97.2; Hensel, 88.5; zygomatic width, 85.2; intertemporal width, 40.6; palatal length, 49.6; median length of nasals, 29.4; length of upper molar series, 30.1; length of mandible, 92.4; length of lower molar series, 40.6. Ex type United States National Museum.

This is a very dark Macaque similar in coloration to P. UMBROSUS but with a shorter tail. The skull is much smaller although the type is a fully adult male.

Subgenus Macacus.

Tail equal to, or exceeding the head and body in length.

PITHECUS UMBROSUS (Miller).

Macacus umbrosus Miller, Proc. U. S. Nat. Mus., XXIV, 1903, p. 789.

NICOBAR ISLAND MACAQUE.

Type locality. Little Nicobar Island, Nicobars. Type in United States National Museum.

Geogr. Distr. Nicobar Group. Great and Little Nicobar; Katchel.

Genl. Char. Color dark, tail longer than head and body.

Color. Very similar to P. FUSCUS; head and upper parts and outer side of limbs, blackish, hairs drab at base and with a subterminal cream buff ring; under parts and inner side of limbs drab; hands and feet like upper parts; tail above nearly black at base, dark drab on apical half, hairs indistinctly annulated with buff. Ex type United States National Museum.

Measurements. Total length, 1,040; tail, 530; foot, 135. Skull: total length, 135; Hensel, 94.7; zygomatic width, 88.8; intertemporal width, 38.5; palatal length, 54.3; median length of nasals, 25.6; length of upper molar series, 33.6; length of mandible, 98.3; length of lower molar series, 40.1. Ex type United States National Museum.

This species and P. FUSCUS resemble each other closely in color but the skulls are quite different, that of the present species being much longer, as are also the molar series in both jaws.

PITHECUS IRUS (F. Cuvier).

Le Macaque Buff., Hist. Nat., XIV, 1766, p. 190, pl. XX.

Simia cynomolgos (nec Linn.), Bodd., Elench. Anim., 1784, p. 58, Buffon's fig.; Fisch., Syn. Mamm., 1829, p. 25.

Cercocebus cynomolgos (nec Linn.), E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 90; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 101, (Part.).

Macacus irus F. Cuv., Mém. Mus. Hist. Nat., Paris, IV, 1818, p. 120; Cabr., Ann. Mag. Nat. Hist., 6, 1910, 8th Ser., p. 620.

Le Macaque F. Cuv., Hist. Nat. Mamm., 1819, liv. XXX, XXXI.

Macacus cynomolgos (nec Linn.), Desm., Mamm., 1820, p. 65; *Id.* Nouv. Dict. Scien. Nat., XXVII, 1823, p. 467; Less., Spec. Mamm., 1840, p. 90; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 30; Blanf., Faun. Brit. Ind., Mamm., 1891, p. 21; Forbes, Handb. Primates, II, 1894, p. 31; Flow., Proc. Zool. Soc. Lond., 1900, p. 316.

Cercopithecus cynomolgos (nec Linn.), Kuhl, Beitr. Zool., 1820, p. 16.

Macacus carbonarius F. Cuv., Hist. Nat. Mamm., 1825, pl. XXXII; I. Geoff., Bélang., Voy., 1834, p. 63; Less., Spec. Mamm., 1840, p. 92; Blyth, Cat. Mamm. Mus. Asiat. Soc., 1863, p. 9.

Simia carbonaria Fisch., Syn. Mamm., 1829, p. 26.

Macacus aureus I. Geoff., Bélang., Voy., Zool., 1834, pp. 58, 76.

Macacus auratus Müll. und Schleg., Verhandl. Geschied., 1839-44, p. 49.

Semnopithecus kra Less., Spec. Mamm., 1840, p. 65.

Inuus cynomolgos (nec Linn.), Wagn., Schreb., Säugth. Suppl., I, 1840, p. 135, pls. XIII, XXII. (Part.).

Inuus carbonarius Wagn., Schreb., Säugth. Suppl., V, 1855, p. 53.

Inuus aureus var. γ, Wagn., Schreb., Säugth. Suppl., V, 1855, p. 53.

Cynamolgos carbonarius Reichenb., Vollständ. Naturg. Affen, 1862, p. 136, pl. XXIII, fig. 341.

Macacus fur Slack, Proc. Acad. Nat. Scien. Phil., 1867, p. 36, pl. I.

CRAB-EATING MACAQUE. Native name *Kra.*

Type locality. Unknown.

Geogr. Distr. Burma, Arakan, Tenasserim, Malay Peninsula.

Genl. Char. Color pale; body heavy; tail longer than head and body; whitish area around eyes; tuft of hair on top of head sometimes elevated.

Color. Top of head, back of neck and entire upper parts, pale greenish olive, the hairs being olive gray banded with cream buff; in some examples there is a brownish wash on the head and dorsal line; outer side of arms and legs olive gray; hands and feet brownish black; sides of head, flanks, inner side of limbs and under parts grayish white; tail above at base like back, remainder smoke gray; beneath grayish white; white area around eyes; face brown or livid; eyelids bluish white; callosities bright flesh color.

Measurements. Total length, 1,080; tail, 650; foot, 130, (skin). Skull: total length, 112; occipito-nasal length, 93.3; Hensel, 80; intertemporal width, 38.3; length of rostrum from posterior end of nasals to base of incisors, 51.1; width of rostrum beneath orbits at alveolar border, 40.3; palatal length, 47.6; median length of nasals, 28.9; width across orbits, inner rim, 48.8; length of upper molar series, 33; length of mandible, 92; length of lower molar series, 42. Ex type of *M. aureus* E. Geoff., in Paris Museum, an immature individual.

This is a gray long-tailed monkey of Burma, Arakan, and Malay Peninsula, always known as *M. cynomolgos* (nec Linn.), until 1825, when Frederic Cuvier (l. c.) described it and called it *Macacus* IRUS.

The above description represents the typical style of this species, but there are considerable variations among individuals both in the color of the pelage and in that of the face. This black handed and black footed Macaque does not seem to go south or east of the Malay Peninsula, but is supplanted by allied forms with gray hands and feet in Java, Flores, Borneo, etc.

Top of head and upper parts of body speckled brownish red and yellow, the hairs being gray at base and ringed with yellowish red; shoulders and thighs gray tinged with yellow; sides of head, whiskers, under parts, and inner side of limbs sooty gray; forearms gray tinged with brown; tail very long, blackish brown at base, grading into grayish brown on apical portion. Face flesh color. Locality Bengal a mistake, as no monkey of this character is found there.

It has been shown by Blanford (l. c.) that Linnæus' *cynomolgos* was misapplied by Schreber to Buffon's "Macaque," which is the Crab-eating Monkey of Burma, and for which F. Cuvier (l. c.) instituted the name of IRUS which is the one it should bear. This species has naturally nothing to do with *cynomolgos* (!) Linnæus, which, as has been shown, was an African Monkey = *Simia hamadryas* Linn., and all the confusion existing in connection with this name has been caused mainly by Schreber.

Two rather striking varieties of the Crab-eating Monkey have been accorded different names and separated as distinct. The first with a dark-colored pelage and dusky face was called *carbonarius* by F. Cuvier, (l. c.) and the second, a golden colored animal with a pale face was designated *aureus* by I. Geoffroy, (l. c.). These two forms, as well as the typical style are found in Burma as stated by Blanford,

(l. c.) and the color of the face has no significance as it varies greatly, and dark and light faces are by no means restricted to a certain color of pelage, and the dark face is seen in an animal with a light hued pelage, and a pale face with an individual having a dark colored coat. It is merely an example of individual variation without any specific value whatever.

There are three specimens in the British Museum from the Baram River district of Borneo, a female and two young. The female closely resembles specimens of P. IRUS from the Malay Peninsula and for the present we can only consider that it represents the same species, but it is not unlikely that, with ample materials to enable a more correct opinion to be formed, it may be found advisable to separate the Bornean animal from the Malayan.

F. Cuvier's type of *M. carbonarius* is not in the Paris Museum, and probably never was in the collection.

Flower, (l. c.) states "when travelling on the Malay rivers one generally sees the Kras in small parties of from two to ten among the tree branches at high tides, but at low water they take to the mud and hunt about for food. They generally take little notice of passing boats, and so can be easily observed. In captivity they become intelligent pets, though the adult male Broh becomes fierce and dangerous. I have known a very large male Kra to be remarkably tame. They delight in water, and, (at any rate in their native climate), should be allowed a bath at least once a day.

"Ridley says he has seen one leaping off the boughs of a tree into the water, climbing up and leaping off again and again, and I was told of one kept by some English soldiers at Singapore that would dive into a deep tub of water and fetch out bananas that were thrown in for it. The males of this species, (as well as some other Macaci), seem to vary very much in size."

PITHECUS MORDAX (Thomas and Wroughton).

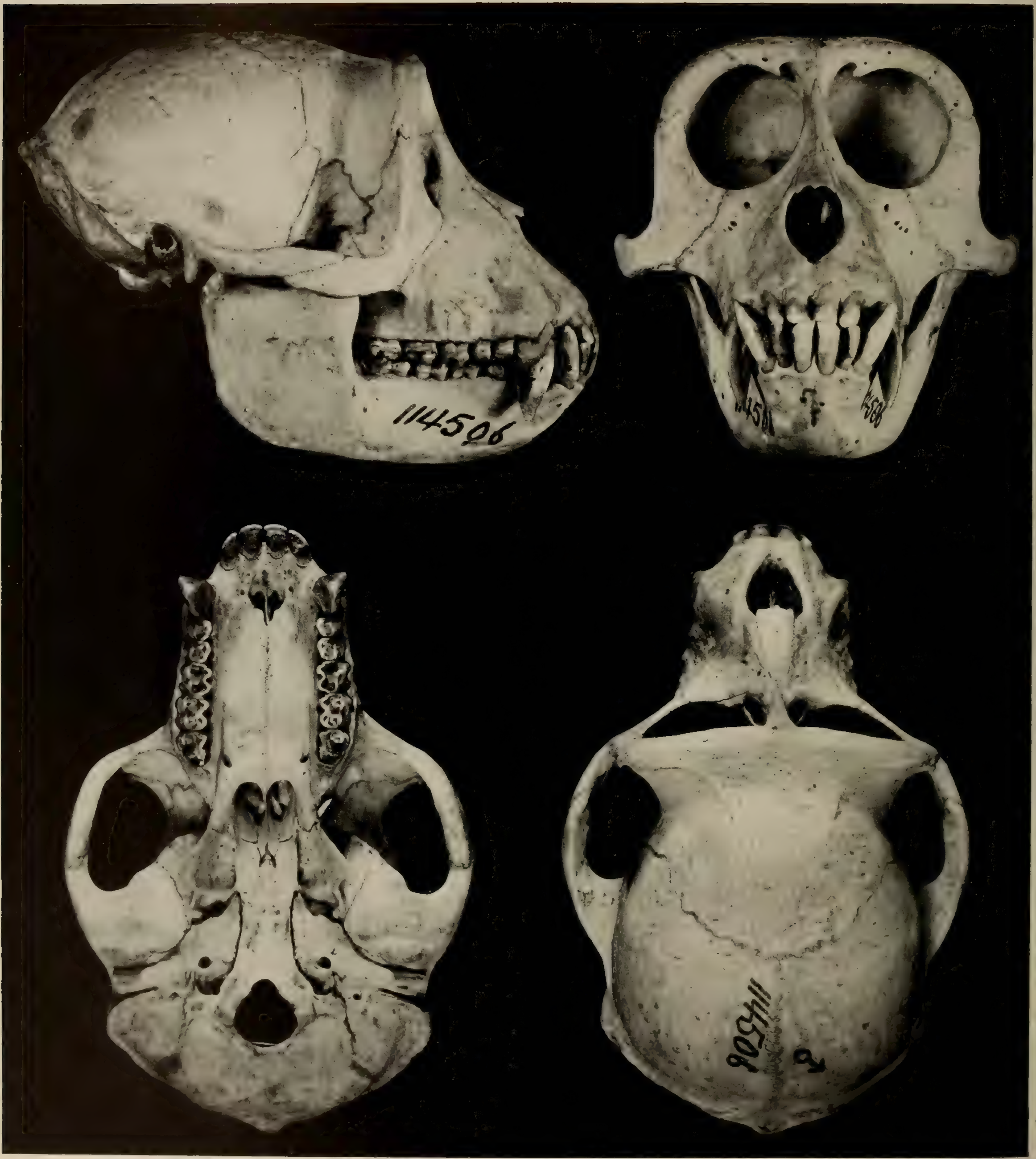
Macaca mordax Thos. and Wrought., Ann. Mag. Nat. Hist., III, 1909, 8th Ser., p. 380.

Type locality. Tjilatjap, West Java. Sea level. Type in British Museum.

Geogr. Distr. Java and Flores.

Genl. Char. Larger than P. FASCICULARIS from Sumatra, no red coloring, teeth larger.

Color. On the forehead a few jet black hairs straggle above the eyes, but not enough of them to make a distinct line; top of head and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PITHECUS FASCICULARIS.

No. 114506 U. S. Nat. Mus. Coll. ⅘ Nat. Size.

upper parts of body reddish brown speckled with golden buff; the hairs being wood brown at base, then banded with blackish brown and golden buff, or golden yellow, the tips of the latter color; cheeks gray, hairs tipped with black forming an upright black line on sides of face, as the hairs radiate forward from the ears, fan-like; face covered with short buffy hairs; chin, throat and under surface and inner side of limbs yellowish white; legs, feet and flanks wood brown; the hairs on upper side of arms and hands gray sparsely banded and tipped with golden yellow; tail, above blackish gray at base grading into a pale grayish brown, hairs banded with yellowish white. Ex type British Museum.

Measurements. Total length, 1,210; tail, 610; foot, 155; ear, 43, (Collector). Skull: total length, 122.1; occipito-nasal length, 102.2; Hensel, 87.3; intertemporal width, 42.5; width of braincase, 58.2; palatal length, 53; median length of nasals, 18; length of upper molar series, 31.8; length of mandible, 91.7; length of lower molar series, 33.2. Ex type British Museum.

This is a brownish Macaque with gray hands and feet, one of the chief characters to separate the species from P. IRUS of the Malay Peninsula. A specimen in the British Museum from Flores cannot be separated from this species, and it probably is an inhabitant of the small islands stretching to the eastward from Java.

PITHECUS FASCICULARIS (Raffles).

Simia fascicularis Raffles, Trans. Linn. Soc. Lond., XIII, 1822, p. 246; Bonhote, Fasc. Malay, Zool., I, 1903, p. 3.

Macacus cynomolgus (nec Linn.), Blyth, Journ. Asiat. Soc. Beng., XVI, 1847, p. 731; Flow., Proc. Zool. Soc. Lond., 1900, p. 316; Meyer, Abh. Mus. Dresd., VI, 1896, p. 4.

Macacus fascicularis Elliot, Cat. Mamm. Field Columb. Mus., F. C. M. Pub., VIII, 1906, p. 567, Zool. Ser.; Pocock, Proc. Zool. Soc. Lond., 1906, p. 558; Cabr., Ann. Mag. Nat. Hist., VI, 1910, 8th Ser., p. 626.

SUMATRAN MACAQUE. Native name *Kra* (Raffles).

Type locality. Sumatra.

Geogr. Distr. Island of Sumatra, and Islands of Terautau, and Langkawi, Straits of Malacca.

Genl. Char. Feet and hands olive gray, very different from the black hands and feet of P. IRUS, (Cuv.). General hue of pelage in adults tawny ochraceous; tail about as long as head and body; eyelids yellow in skin, probably flesh color in life. Ascending ramus of mandible, broad and low, angle of anterior edge nearly upright, curving backward at top.

Color. Narrow black line formed of long stiff hairs on forehead; top of head, nape and hind neck tawny, slightly duller on upper parts of body, the hairs being purplish on basal half, then banded with tawny ochraceous, this giving the dominant color; eyelids flesh color; face covered with short white hairs; sides of head covered with long olive gray hairs, projecting forward in form of a semicircle from the ear, and meeting the grayish white hairs from the temples and cheeks, which run backwards and form an upstanding ridge; outer surface of arms and thighs olive gray speckled with yellow; legs, hands, and feet olive gray; inner side of limbs, and under parts silvery gray; tail brownish black above, grayish brown beneath.

Measurements. Total length, 1,300; tail, 600; foot, 125. Skull: occipital region gone; Hensel, 86; breadth of orbits, inner rim, 48.1; length of rostrum, posterior end of nasal to base of incisors, 48.7; breadth of rostrum posteriorly at alveolar border, 36.2; median length of nasals, 20.3; palatal length, 44.4; length of upper molar series, 31.8; length of mandible, 85.2; length of lower molar series, 41.1.

This species has for a long time been regarded by most writers as the same as P. IRUS (F. Cuv.), but that species has black hands and feet as was originally described by F. Cuvier, whereas the present species has gray hands and feet, and the general color of the pelage is tawny, quite a different hue from that of P. IRUS. The Macaques on the islands lying between Sumatra and Singapore have a pelage whose color is very similar to this one from Sumatra, but possess dental and cranial characters sufficiently different to prevent them from being considered the same species. Raffles in his description, (l. c.) made no mention of the color of the hands and feet, and this important character for differentiating this from the Malay Macaque seems to have been entirely overlooked by subsequent Authors. In size P. FASCICULARIS and P. IRUS are about equal, but in general appearance they do not resemble each other very much.

PITHECUS MANDIBULARIS Elliot.

Pithecus mandibularis Elliot, Proc. U. S. Nat. Mus., XXXVIII, 1910, p. 347; Lyon, Proc. U. S. Nat. Mus., XL, 1911, p. 137.

Type locality. Sungei Sama near Pontianak, Borneo. Type in United States National Museum.

Genl. Char. Similar in coloration to P. FASCICULARIS but paler, less red, and the ascending ramus of mandible narrower, higher, and with a backward inclination.

Color. Upper parts ochraceous buff, the hairs being gray at base and banded with black and ochraceous buff, the latter color dominating; top of head more tawny; whorl on cheeks and below ears gray; outer side of arms and hands gray speckled with yellow, outer side of thighs like back; legs below knees, and feet smoke gray, unspeckled; under parts and inner side of limbs whitish; tail above blackish paler towards tip, beneath buffy gray. Ex type United States National Museum.

Measurements. Total length, 1,015; tail, 570; foot, 140. Skull: total length, 112; occipito-nasal length, 95.9; Hensel, skull broken; zygomatic width, 77; intertemporal width, 41.7; palatal length, 45.1; median length of nasals, 26.9; length of upper molar series, 28; length of mandible, 80.9; length of lower molar series, 34.8; width of ascending ramus at middle, 22.3; at top, 23.3; extreme perpendicular height, 38.1. Ex type United States National Museum.

The great difference in the shape of the ascending ramus persists in all the skulls, and when compared with that of P. FASCICULARIS its narrowness and height are conspicuous. The ascending ramus of the mandible of P. CARIMATÆ is about half way between the Sumatran and Bornean Macaques and in the color of the pelage it is quite unlike both.

PITHECUS CAPITALIS Elliot.

Pithecus capitalis Elliot, Proc. U. S. Nat. Mus., XXXVIII, 1910, p. 350.

Type locality. Trong, Lower Siam. Type in United States National Museum.

Geogr. Distr. Lower Siam, and Telibon Island.

Color. Nearest to P. FASCICULARIS with gray hands and feet, but without the reddish hue on head and neck. Skull much larger and very different in character.

Color. Top of head and entire upper parts yellowish brown, the hairs gray at base, then banded with dark brown and yellow; limbs, hands and feet grayish brown on outer side yellowish on inner; tail above dark grayish brown, beneath yellowish white. Ex type United States National Museum.

Measurements. Total length, 1,143; tail, 635. Skull: total length, 123; occipito-nasal length, 103.7; intertemporal width, 45; Hensel, 87.7; zygomatic width, 89.8; palatal length, 53.5; median length of nasals, 31; length of upper molar series, 32; length of mandible, 97.1; length of lower molar series, 40.1. Ex type United States National Museum.

The specimen has a very worn coat, and hairs thinly dispersed on limbs and under parts. While the coloring is dissimilar to that of P. FASCICULARIS the great difference between it and the Trong Macaque is in the size and shape of the skull and teeth. The skull of the Sumatran animal, although of about the same age, is apparently one third smaller. The Trong skull has a low crest from the midfrontal to the occiput; the rostrum is longer and broader; zygomatic width greater; nasals wider; bony palate deeper and longer; teeth larger, incisors more than twice as large; mandible longer and heavier, the ascending ramus broader and longer, with a very slight inclination backward.

A single specimen, a male, from Telibon Island has a smaller skull, and the color of the animal is somewhat different. This example may eventually prove distinct, but at present I leave it under the name of the Trong Macaque.

PITHECUS LÆTUS Elliot.

Pithecus lætus Elliot, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 255.

Type locality. Island of Tingi, South China Sea off the south east coast of the Malay Peninsula. Type in British Museum.

Geogr. Distr. Tingi and Tioman Islands, South China Sea.

Genl. Char. Color similar to, but paler than that of P. KARIMONI and its allies; tail longer than head and body; skull with facial region nearly as long as braincase; teeth moderately large; canines very long; bony crest for nearly the entire length of braincase; tooth rows slightly curved; last lower molar nearly one third longer than second molar, and with well-developed six cusps.

Color. Forehead flesh color; general hue wood brown with a reddish tinge, brightest on head where the hairs are purplish on basal half, then banded with ochraceous, the bands lighter on lower back and rump where they become cream buff; space above eyes flesh color, (yellowish in skin); stiff black hairs along edge of forehead; nose and lips covered with very short iron gray hairs; sides of crown and head whitish gray, hairs turning upwards in front of ears; outer side of arms and hands grayish cream color; legs whitish gray, feet brown covered with whitish gray hairs; chin broccoli brown; rest of under parts and inner side of arms and legs yellowish white; tail on basal half above black, remainder bluish gray, beneath pale drab gray. Ex unique type British Museum.

Measurements. Total length, 975; tail, 550; foot, 129, (Collector). Skull: total length, 114.7; occipito-nasal length, 98.8; Hensel, 76.3; zygomatic width, 80.3; intertemporal width, 41.4; width of braincase, 57.7; length of rostrum, 41.6; width of rostrum beneath orbits, 32.1; at jaw, 39.1; palatal length, 42.9; median length of nasals, 18.1; length of upper molar series, 30; length of canines, 25.2; length of mandible, 87.4; length of lower molar series, 68.7. Ex type British Museum.

This is a much paler Macaque than any of the island forms described, with pale yellowish gray arms, and whitish gray legs. The general color of the top of head and nape at a little distance is ochraceous, contrasting rather strongly with the reddish wood brown of the back. The skull is rather large and heavy, more like that of P. FASCICULARIS of Sumatra, than any of those described from the various islands. Two specimens from Tioman Island, north of Tingi, are much darker in color, but as they present no cranial differences from Tingi Island examples, I have not separated them, though the coloring is quite different.

PITHECUS LINGUNGENSIS Elliot.

Pithecus lingungensis Elliot, Proc. U. S. Nat. Mus., XXXVIII, 1910, p. 344.

LINGUNG ISLAND MACAQUE.

Type locality. Pulo Lingung, Natuna Islands. Type in United States National Museum.

Genl. Char. Tooth row long; general color of fur reddish.

Color. Top of head, and upper parts rich tawny and black, base of hairs grayish; outer side of limbs, hands and feet, gray, hairs banded and tipped with cream buff; under parts, and inner side of limbs yellowish white; tail above at root like back, remainder brownish black, hairs barred with cream buff; beneath smoky gray. Ex type United States National Museum.

Measurements. Total length, 847; tail, 574. Skull: total length, 108.8; occipito-nasal length, 91.8; Hensel, 75; intertemporal width, 37.9; palatal length, 45.8; median length of nasals, 27; length of upper molar series, 30.4; length of mandible, 78.5; length of lower molar series, 37.7. Ex type United States National Museum.

In general appearance this Macaque is totally unlike P. SIRHASSENENSIS, and while the skulls of the two forms have a general resemblance to each other, the present species has a narrower braincase, longer tooth rows, and smaller incisors, these being intermediate between the species just named and P. LAUTENSIS. One specimen only was obtained by Dr. Abbott.

PITHECUS LAUTENSIS Elliot.

Pithecus lautensis Elliot, Proc. U. S. Nat. Mus., XXXVIII, 1910, p. 345.

LAUT ISLAND MACAQUE.

Type locality. Pulo Laut, Natuna Islands. Type in United States National Museum.

Genl. Char. Resembling P. LINGUNGENSIS but not so red; skull entirely different.

Color. Top of head and upper parts tawny ochraceous and brownish black; arms and hands bluish gray; hairs tipped with cream buff; outer side of thighs unicolor to back, legs olive gray; feet darker, being brownish gray; under parts and inner side of limbs, silvery gray; tail above blackish brown becoming gradually paler towards tip, beneath whitish gray. Ex type United States National Museum.

Measurements. Total length, 1,018; tail, 548. Skull: total length, 112.2; occipito-nasal length, 95.3; Hensel, 80.7; intertemporal width, 39.8; zygomatic width, 82.7; palatal length, 45.7; breadth of braincase, 54.5; median length of nasals, 27.1; length of upper molar series, 27.1; length of mandible, 84.1; length of lower molar series, 36.1. Ex type United States National Museum.

This Macaque is very similar in color on body and head to P. LINGUNGENSIS, but is very different in the color of the limbs, arms particularly. The main differences are to be found in the skull. This has a very broad face, and space across orbits very wide; orbital ridge much heavier; the braincase is larger in every way, and the root of the zygomata broader and heavier; palate is wider; basioccipital and basisphenoid broader and longer, and the zygomatic arch more widely spread; the outer edge of the occipital region in P. LINGUNGENSIS is rounded, but pyramidal without the cap in the present species; incisors smaller.

Altogether the two skulls are as different in all respects as two crania can well be of species belonging to the same genus. One example obtained by Dr. Abbott.

PITHECUS SIRHASSENENSIS Elliot.

Pithecus sirhassenensis Elliot, Proc. U. S. Nat. Mus., XXXVIII, 1910, p. 345.

SIRHASSEN ISLAND MACAQUE.

Type locality. Sirhassen Island, Natuna Islands. Type in United States National Museum.

Genl. Char. General hue very dark; limbs and feet paler. Skull in general character nearest to P. LINGUNGENSIS, but tooth rows much shorter.

Color. Top of head, upper parts and sides of body, and outer side of thighs blackish brown and ochraceous, the hairs gray at base then banded with ochraceous and black and tips black; limbs, hands and feet pale gray, hairs banded with cream buff; under parts and inner side of limbs grayish white; tail above at base blackish, hairs ringed with ochraceous, grading into smoke gray for remaining part, beneath smoke gray. Ex type United States National Museum.

Measurements. Total length, 1,110; tail, 600. Skull: total length, 113.3; breadth of braincase, 54; intertemporal width, 40.5; palatal length, 47; median length of nasals, 27; length of upper molar series, 27.6; length of mandible, 77.7; length of lower molar series, 35.5. Ex type United States National Museum.

This species, from the island in the southern part of the Natuna Group, is very dark in color, differing greatly from the other Macaques from the rest of these islands.

The skull resembles more nearly that of P. LINGUNGENSIS from Lingung Island, near to Natuna, but the length of the tooth row is much less, the palate is wider, and the braincase broader. One example only was obtained.

PITHECUS VITIIS Elliot.

Pithecus vitiis Elliot, Proc. U. S. Nat. Mus., XXXVIII, 1910, p. 346.

MERGUI MACAQUE.

Type locality. Domel Island, Mergui Archipelago. Type in United States National Museum.

Geogr. Distr. Domel, St. Matthew and Sullivan Islands, Mergui Archipelago.

Genl. Char. Hair long, loose; hands and feet yellowish gray.

Color. General color of top of head and upper parts, wood brown, darkest on dorsal line, and lighter on sides, the hairs being gray at base, banded with black and yellow; arms and hands similar to back;

thighs like back; legs pale yellowish brown, feet slightly darker; under parts and inner side of limbs, yellowish gray; tail above blackish brown, at root like back, beneath yellowish brown. Ex type United States National Museum.

Measurements. Total length, 935; tail, 495. Skull: total length, 116.6; occipito-nasal length, 99.7; Hensel, 80.4; zygomatic width, 76.6; intertemporal width, 43.7; palatal length, 44.6; median length of nasals, 28.4; length of upper molar series, 34; length of mandible, 86; length of lower molar series, 39.5. Ex type United States National Museum.

This is a gray hand and foot Macaque, quite different from the Javan gray banded species P. MORDAX and P. RESIMUS, as is to be expected. Specimens were obtained by Dr. Abbott besides the type locality, on St. Matthew and Sullivan Islands in the same Archipelago. One was a very old male in faded pelage, and another a female resembling closely the male described above.

PITHECUS CARIMATÆ Elliot.

Pithecus carimatæ Elliot, Proc. U. S. Nat. Mus., XXXVIII, 1910, p. 346; Lyon, Proc. U. S. Nat. Mus., XL, 1911, p. 137.

Type locality. Telok Pai, Carimata Islands. Type in United States National Museum.

Genl. Char. Similar to P. MANDIBULARIS from Sungei Sama near Pontianak, Borneo, but grayer and without the tawny hues of that form. Skull with tooth rows straight, not curved, teeth larger, and tooth rows longer; palate deeper, longer and wider; incisors narrower in both jaws; orbits smaller; narial opening much larger; intertemporal breadth less; braincase shorter and narrower; mandible stouter, horizontal portion deeper.

Color. Space around eyes bare, flesh color; superciliary stripe gray, above which is a narrow black bar across forehead; top of head, neck, upper parts, and outer side of thighs, mottled blackish brown and buff with a grayish wash, the hairs being gray at base, which shows through, then annulated with buff and black, and tipped with black; flanks gray; arms on outer side, and hands, dark grayish, hairs ringed with whitish; legs uniform gray, feet gray with brownish tinge; tail above, black, smoke gray at tip, beneath dirty white. Ex type United States National Museum.

Measurements. Total length, 1,115; tail, 655; foot, 144. Skull: total length, 114; occipito-nasal length, 95.8; intertemporal width, 39.9; zygomatic width, 77.5; palatal length, 48.3; median length of nasals, 28.1; length of upper molar series, 30.1; length of mandible, 85.6; length of lower molar series, 37.2. Ex type United States National Museum.

This is a very large Macaque with a very long tail, and of a general grayish brown color. It does not closely resemble any known species.

Pithecus baweanus Elliot.

Pithecus baweanus Elliot, Proc. U. S. Nat. Mus., XXXVIII, 1910, p. 347; Lyon, Proc. U. S. Nat. Mus., XL, 1911, p. 137.

BAWEAN ISLAND MACAQUE.

Type locality. Bawean Island, Java Sea. Type in United States National Museum.

Genl. Char. Larger than P. CUPIDUS from Mata Siri, but tail dark hair brown with an olive tinge. General hue more yellowish.

Color. Nude spot above eyes yellowish; face covered with short gray hairs; short black bar above eyes; top of head and entire upper parts, dark buff yellow and black, hairs gray at base, and banded with buff yellow and black on apical portion, and tipped with black; outer side of arms and hands more grayish than upper parts, base of hairs being bluish gray and barred with cream buff and tipped with black; outer side of thighs like back; legs from knees to ankles, and feet gray, with cream buff annulations, less numerous and distinct than on arms; hairs radiating forward and downward from ears, showing their under side to base, whitish gray with a cream buff edging; throat, under parts of body, and inner side of limbs yellowish white; tail above, blackish brown at base speckled with buff, remainder dark hair brown, beneath olive gray. Ex type United States National Museum.

Measurements. Total length, 1,052; tail, 580; foot, 141. Skull: total length, 127; occipito-nasal length, 106.7; Hensel, 90; intertemporal width, 41.3; zygomatic width, 88.9; palatal length, 51.9; median length of nasals, 22.3; length of upper molar series, 34.9; length of mandible, 89.1; length of lower molar series, 36.9. Ex type United States National Museum.

This species differs from P. CUPIDUS from Mata Siri Island in the bands on hairs being much paler, giving a yellow tone to the upper parts, and in the paler and more olive tail. It is also somewhat larger. The skull is entirely unlike that of its relative from Mata Siri. It is much larger in every way. The rostrum is broader and heavier; nasals wider; orbital ridges heavier and more elevated in center; crest higher and shorter, the two lateral ridges not uniting until they reach the posterior portion of the frontal; occipital region has a more acute angle, bullæ more inflated, palate wider; tooth row curved posteriorly, the last molar set inward on both sides; incisors projecting at a more acute angle; zygomatic arch curved and with considerable spread. The skulls of the two Macaques possess unusually numerous points of difference, not often seen in allied species.

PITHECUS CUPIDUS Elliot.

Pithecus cupidus Elliot, Proc. U. S. Nat. Mus., XXXVIII, 1910, pp. 34-38; Lyon, Proc. U. S. Nat. Mus., XL, 1911, p. 137.

Type locality. Pulo Mata Siri, Java Sea. Type in United States National Museum.

Genl. Char. Size moderate, hands and feet yellow; tail longer than head and body; hair radiating fan like from ears.

Color. Space above eyes nude, flesh color or yellowish; face covered with very short grayish white hairs; cheeks and sides of head yellowish gray, hairs long and radiating forward from ears, fan shape; top of head and entire upper parts, general tone ochraceous buff and black, the hairs gray at base, and banded with ochraceous buff and black, and tipped with black; flanks gray with a yellow tinge; arms and hands, legs and feet, cream buff and dusky, the hairs dusky at base, barred with cream buff and black, and tipped with the latter color; throat, chest, entire under parts of body, and inner side of limbs whitish; tail above brownish black for three fourths the length, grading into grayish brown at the tip, beneath brownish olive. Ex type United States National Museum.

Measurements. Total length, 975; tail, 540; foot, 127. Skull: total length, 117.3; occipito-nasal length, 97; Hensel, 84.2; zygomatic width, 80.7; intertemporal width, 36.5; palatal length, 50.7; median length of nasals, 21.2; length of upper molar series, 30; length of mandible, 69.7; length of lower molar series, 37.5. Ex type United States National Museum.

This species is quite unlike P. MORDAX from Java, but nearer the one from Bawean Island, from which, however, it is easily distinguished by its blackish brown tail. All these Javanese Macaques appear to have the forward fan-shaped radiation of the hair from the ears, a peculiarity belonging however to others of the genus, but usually with a more circular radiation, not so much confined to a forward movement.

The skull is very different from the Bawean Island Macaque, being much smaller, with a narrow rostrum, decreasing in width towards incisors; the zygomatic arch has very little expansion, and is parallel with the skull, being practically straight without curve; orbits much higher than wide; a low ridge is present from frontal to occiput, formed of the inner ridge-like edge of orbits uniting on anterior part of the frontal, dividing again at the interparietal, and joining the occipital ridge on either side; tooth rows straight, palate narrow; upper incisors projecting.

PITHECUS AGNATUS Elliot.

Pithecus agnatus Elliot, Proc. U. S. Nat. Mus., XXXVIII, 1910, p. 339.

Type locality. Pulo Tuang Ku, Banjak Islands. Type in United States National Museum.

Genl. Char. Nearest to P. PHÆURUS but paler; hands, feet and tail lighter.

Color. Black bar on forehead rather indistinct; top of head, hind neck, and upper parts, with the hairs gray at base, then banded with ochraceous and black, and tipped with black, giving a general ochraceous hue with a sienna tinge, without any of the tawny shade seen in P. PHÆURUS; arms and hands gray, hairs tipped with cream buff; thighs on outer side like back; legs and feet smoke gray; under parts, and inner sides of limbs, yellowish white; tail above black at root, hairs tipped with ochraceous, grading into pale smoke gray on apical half; beneath pale gray; a band of russet crosses beneath the chin. Ex type United States National Museum.

Measurements. Total length, 953; tail, 530. Skull: total length, 107; occipito-nasal length, 88.4; Hensel, 75; intertemporal width, 39.3; zygomatic width, 74.1; palatal length, 45.6 median length of nasals, 28.1; length of upper molar series, 28.5; length of mandible, 78.2; length of lower molar series, 35.3. Ex type United States National Museum.

This Macaque is allied to P. PHÆURUS, but differs in its general paler coloration, lighter hands, feet, and tail. Four examples were procured at Tuang Ku Island, of the Banjak group.

PITHECUS PHÆURUS (Miller).

Macaca phæura Miller, Miscell. Coll. Smith. Inst., Wash., XLV, 1903, p. 63.

DARK-TAILED MACAQUE.

Type locality. Siaba Bay, Nias Island, N. W. of Sumatra. Type in United States National Museum.

Genl. Char. Similar to P. IRUS but darker.

Color. Crown, upper parts, and sides, tawny ochraceous and black; outer surface of limbs like body, but arms tinged with gray; forehead sprinkled with black; cheeks buffy gray and black grizzled; sides of neck and under parts pale écru drab; tail above, black, beneath écru drab; hands like outer side of arms, and feet like legs. Ex type United States National Museum.

Measurements. Total length, 940; tail, 480; foot, 130. Skull: total length, 113.9; occipito-nasal length, 94.4; Hensel, 81.5; zygomatic breadth, 76.7; width of braincase above zygomata, 56; palatal length, 48; median length of nasals, 27; length of upper molar series, 27.9; length of mandible, 83.3; length of lower molar series, 34.8. Ex type United States National Museum.

PITHECUS LAPSUS Elliot.

Pithecus lapsus Elliot, Proc. U. S. Nat. Mus., XXXVIII, 1910, p. 343.

Macaca phæura (nec Miller), Lyon, Proc. U. S. Nat. Mus., XXXI, 1906, p. 606.

Type locality. Island of Banka, east of southern Sumatra. Type in United States National Museum.

Geogr. Distr. Islands of Banka and Billiton.

Genl. Char. Similar to P. PHÆURUS but much darker in color; rostrum shorter, narrower; premaxillæ protruding, lengthened.

Color. Frontal streak, black, conspicuous, broader than in P. PHÆURUS; top of head, upper parts of body, and outer side of arms and thighs, with hairs pale drab at base, and annulated on apical half with black and tawny ochraceous; legs below knees gray with buff tips to the hairs; cheeks, under parts and inner side of limbs, buffy smoke gray; hands similar to outer side of arms; feet yellowish gray; tail blackish at base above, grading into gray at tip, beneath smoky gray. Ex type United States National Museum.

Measurements. Total length, 955; tail, 520; foot, 124, (Collector). Skull: total length, 110.8; occipito-nasal length, 94.7; Hensel, 80.2; zygomatic width, 76.2; intertemporal width, 37.5; palatal length, 43.7; median length of nasals, 27.7; length of upper molar series, 28; length of mandible, 83; length of lower molar series, 36.3. Ex type United States National Museum.

Dr. Lyon (l. c.) has referred these specimens to (*M.*) PHÆURA Miller, overlooking various differences both in skulls, and color of pelage. The latter is very different, much darker generally, and not so yellow in tone, while the feet are a yellowish gray quite different from the dark feet of P. PHÆURUS. The geographical distribution of the two forms would seem to negative the idea of their belonging to the same species.

PITHECUS LINGÆ Elliot.

Pithecus lingæ Elliot, Proc. U. S. Nat. Mus., XXXVIII, 1910, p. 349.

Type locality. Linga Island, Rhio Archipelago. Type in United States National Museum.

Genl. Char. Size medium; hands brownish; feet whitish gray; hair long, loose.

Color. Broad black band across forehead; top of head, neck, upper parts, and outer side of thighs, rusty in certain lights, less red in others, and paler on the thighs, the hairs being dark brown at base, then barred with dark ochraceous and black, and tipped with black; outer side of arms and hands dark brown washed with buff, the hairs being dark brown at base, then barred and tipped with buff; legs smoky gray with a slight yellow tinge, feet whitish gray, hairs being brown with white tips, hair scanty; under parts, and inner side of limbs, whitish; tail above like back at root, then black, changing to slate gray at tip, beneath smoke gray. Ex type United States National Museum.

Measurements. Total length, 782; tail, 560. Skull: total length, 111.5; occipito-nasal length, 93.9; Hensel, 80; intertemporal width, 40.4; zygomatic width, 76.5; palatal length, 45.7; median length of nasals, 29.3; length of upper molar series, 29.4; length of mandible, 84.9; length of lower molar series, 37.7. Ex type in United States National Museum.

This is a reddish hued Macaque, with a long, loose coat, and a long tail, not very much like any of the other species. It varies in coloration, for another male taken on the same day, July 23, has none of the reddish hue so strongly exhibited by the type, and is more of a dark brown hue with a yellowish tinge. The limbs and tail are also much lighter. The skull is short and broad for its length, palate broad, and the tooth rows slightly curved; teeth rather large, last premolar and molars, each with four cusps; teeth of lower molar series smaller than those in the upper.

PITHECUS IMPUDENS Elliot.

Pithecus impudens Elliot, Proc. U. S. Nat. Mus., XXXVIII, 1910, p. 350.

Type locality. Pulo Sugi, Rhio Archipelago. Type in United States National Museum.

Genl. Char. Size medium, tail very long. Skull: with rostrum narrow anteriorly; incisors very small; posterior edge of last molar not reaching palatal arch; tooth rows curved; nasals comparatively long, broad anteriorly; tail longer than head and body.

Color. Space above eyes bare, flesh color; face covered with short white hairs; narrow black line on forehead; top of head and upper parts ochraceous and black, the hairs annulated with these colors, and gray at base; outer side of thighs similar but paler; flanks grayish; arms and hands dark brownish gray and buff; legs smoke gray, feet similar with a yellow tinge; under parts and inner side of limbs whitish; tail above blackish on basal half, smoke gray on remainder, beneath yellowish white. Ex type United States National Museum.

Measurements. Total length, 962; tail, 522. Skull: total length, 109.3; occipito-nasal length, 92.6; Hensel, 73.4; intertemporal width, 38; zygomatic width, 72.6; palatal length, 42.7; median nasal length, 26.7; length of upper molar series, 27.1; length of mandible, 77.9; length of lower molar series, 34.1. Ex type United States National Museum.

PITHECUS BINTANGENSIS Elliot.

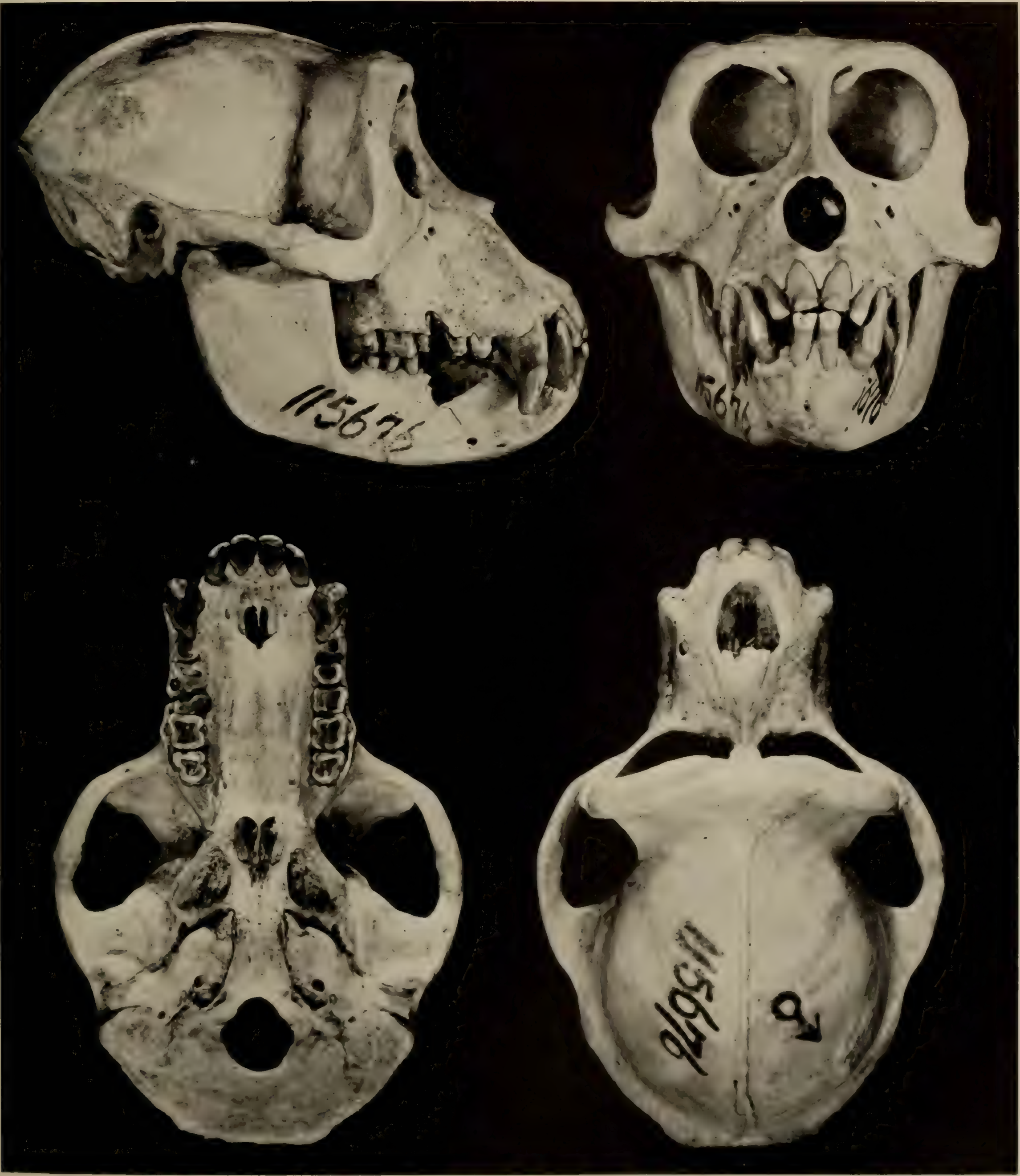
Pithecus bintangensis Elliot, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 257.

Type locality. Sungei Boru, north east part of Island of Bintang. Type in British Museum.

Geogr. Distr. Islands of Bintang and Batam.

Genl. Char. General hue dark, burnt umber. Skull: facial region about three fourths the length of braincase; septum very narrow; outer edge of zygomatic arch straight, sloping slightly inward posteriorly to root of zygoma; greatest width of rostrum equal to its length; tooth rows straight; teeth of moderate size; width of palate about equal throughout the length; braincase balloon shape, much constricted at intertemporal region, bulging posteriorly.

Color. Male. Patch above eyes flesh color; general hue above, burnt umber on head and upper parts, the hairs being slate gray, and banded on apical half with tawny ochraceous and black; narrow line over eyes blackish gray; numerous long stiff black hairs standing



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PITHECUS BINTANGENSIS.

No. 115676 U. S. Nat. Mus. Coll. ⅘ Nat. Size.

upright over forehead, producing indistinct black lines on each side; nose covered with short grizzled black and white hairs; sides of face buffy; on sides of head from below ears, and on cheeks are long grayish hairs banded with white, projecting forward, forming bushy whiskers; outer side of arms and thighs iron gray, hairs banded with cream buff; legs below knees iron gray; under parts and inner side of limbs grayish white; hands and feet iron gray, speckled with cream buff like limbs; tail above black, sparsely speckled with white, beneath silver gray. Ex type British Museum.

Female. Upper parts russet, speckled with cream buff; arms and hands blackish, speckled with cream buff; thighs like back; legs olive gray; feet and toes black, covered with gray hairs; tail like the male.

Measurements. Total length, 964; tail, 508; foot, 117.5; ear, 29, (Collector). Skull: total length, 105.5; occipito-nasal length, 85.5; Hensel, 73.5; zygomatic width, 72.5; intertemporal width, 37.1; width of braincase, 54.9; length of orbital ridge, 45.4; greatest width of rostrum, 38.5; length of rostrum, 38.5; median length of nasals, 24.4; palatal length, 44.6; length of upper tooth row, 26.7; length of mandible 80.8; length of lower tooth row, 35; size of last lower molar, .89 x .68. Ex type British Museum.

There is a great difference in the coloring of the sexes, the female being much lighter and redder, and this difference is exhibited in very young males which are as dark as the adult males; a coloration quite dissimilar from that of the females. This species appears to be also an inhabitant of the neighboring island of Batam. There are only females unfortunately from that island in the collection, and they closely resemble in color examples of the same sex from Batam. Of course, when adult males are procured cranial characters and difference of coloring may be discovered, but with the present material only available, the examples from the two islands must be regarded as belonging to the same species. This is a very dark and handsome Macaque, closely allied in general appearance to the species from Singapore Island, although there are some differences in color on the crown of the head and on the legs. But the skulls are not alike and the size of the teeth differs, especially the upper incisors which are much smaller in P. BINTANGENSIS, and in the straight tooth rows. The other cranial differences are mentioned above. Specimens were obtained on the northern coast of Bintang Island at Sanjang, Tanjang Sau, Tomback, Pasir Panjang, and Sungei Boru whence the type specimen came.

PITHECUS DOLLMANI Elliot.

Pithecus dollmani Elliot, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 256.

Type locality. Tjangi, Island of Singapore, south eastern part. Type in British Museum.

Genl. Char. Resembles in color P. BINTANGENSIS, but much larger, and different cranial characters. Skull longer and heavier; width across orbital ridge greater; intertemporal width greater; braincase longer and broader; zygomatic arch less rounded anteriorly; rostrum wider than long; incisor teeth much longer; tooth rows curved, not straight; basioccipital much wider; lower molars smaller; ascending ramus of mandible wider; upper and lower tooth rows much longer.

Color. Patch above eyes, flesh color; general hue burnt umber as in P. BINTANGENSIS, and hairs banded in the same way with black and tawny ochraceous; top of head redder than in the species compared; the arms more thickly speckled with yellow, and the legs much paler, a smoky gray instead of iron gray; tail black above, silvery gray beneath; rest of pelage like P. BINTANGENSIS. Ex type British Museum.

Measurements. Total length, 977; tail, 573; foot, 135; ear, 34, (Collector). Skull: total length, 110.8; occipito-nasal length, 94.2; Hensel, 78.5; zygomatic width, 73.2; intertemporal width, 42.1; greatest width of braincase, 57.1; length of orbital ridge, 53.9; greatest width of rostrum, 35; length of rostrum, 35.9; median length of nasals, 24; palatal length, 39; length of upper tooth row, 29.1; length of mandible, 79.2; length of lower tooth row, 37.4; size of last molar, 89.7 x 60. Ex type British Museum.

With the exception of a redder head and hind neck, and paler legs, the present species resembles in the color of its pelage P. BINTANGENSIS from Bintang Island. But it is a larger animal and has very different cranial characters, as is shown above.

PITHECUS PHILIPPINENSIS I. Geoffroy.

Macacus philippinensis I. Geoff., Archiv. Mus. Hist. Nat. Paris, II, 1841, p. 568, pl. V, albino; *Id.* Cat. Primates, p. 29; Mearns, Proc. U. S. Nat. Mus., XXVIII, 1905, p. 406.

Inuus palpebrosus I. Geoff., Cat. Primates, 1851, p. 93; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 54.

Pithecus (*Macacus*) *philippinensis* Dahlb., Stud. Zool. Fam. Reg. Anim. Nat., fasc. I, 1856, pp. 118, 120.

Cynamolgos philippinensis Reichenb., Vollständ. Naturg. Affen, 1862, p. 134, pl. XXIII, fig. 340, albino.

Cynamolgos palpebrosus Reichenb., Vollständ. Naturg. Affen, 1862, p. 137, not figured.

Macacus cristatus Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 30.

Cynomolgos (!) *mindanensis* Mearns, Proc. U. S. Nat. Mus., XXVIII, 1905, p. 428; Thos., Trans. Zool. Soc. Lond., XIV, 1898, p. 381, (Part.).

Macaca (!) *syrichta* (nec Linn.), O. Thomas, Proc. Zool. Soc. Lond., 1911, p. 129.

PHILIPPINE MACAQUE.

Type locality. Manila, Island of Luzon, Philippines. Type an albino in Paris Museum.

Geogr. Distr. Islands of Luzon and Mindanao, and probably the intervening islands.

Genl. Char. Color dark, burnt umber and black.

Color. "Upper parts raw umber, the hairs everywhere annulated with blackish, top of head strongly washed with burnt umber, sides of head pale grayish olive; forehead with grizzled brown front, ornamented with long stiff black hairs forming a bushy brow; outer surface of limbs tawny olive, becoming dark gray on the fingers and toes; tail slaty black at base above becoming paler towards the extremity, and olive drab below, with a few tawny annuli to the hairs of the upper side near the base." Mearns, desc. of *C. mindanensis.*

Measurements. Male, total length, 1,665; tail, 550; foot, 120. Skull: total length, 125; occipito-nasal length, 104.4; Hensel, 83.5; intertemporal width, 41.9; zygomatic width, 77.5; breadth of braincase, 60.4; length of nasals, 28.5; palatal length, 48; length of upper molar series, 29.8; length of mandible, 90.9; length of lower molar series, 38.3. Ex spec. British Museum, ex Lopez, S. Luzon.

Specimens from north and south Luzon and from the Island of Mindanao in the British Museum are identical with the description of *M. palpebrosus* I. Geoff., and with Dr. Mearns' *C. mindanensis.* The M. PHILIPPINENSIS Geoff., in the Paris Museum, has been founded on an albino, and is stated to have come from Manila. It must be the same as the animal afterwards described as *P. palpebrosus,* and the latter name becomes a synonym.

Specimens of a large, dark Macaque in the British Museum Collection from north and south Luzon, exact locality not stated, I refer to this species as they answer Dr. Mearns' description very well. It would therefore appear that the species is distributed throughout the length of the Archipelago.

Mr. O. Thomas (l. c.) considers that the *Simia syrichta* Linn., Syst. Nat., 1758, p. 29, No. 21, must be the present species because of the locality given *"Luzonum insulis."* Neither Petiver's figure nor Linnæus' description indicate in any degree whatever that P. PHILIPPINENSIS is the species had in mind when Linnæus bestowed the name upon a Philippine monkey. If there was only one Macaque in those islands it might then be very properly decided that the name *syrichta* should be given to it, but as there are several Macaques in the Philippines, and neighboring islands, and our knowledge of their distribution in the Archipelago is extremely limited, it is quite impossible to determine which one it was that Linnæus called *syrichta.* Much stress cannot be placed upon the locality *"Luzon"* for that island contained the port from which most of the commodities shipped to Europe came, and although the example figured by Petiver and which we may confidently believe Linnæus never saw, has "Luzon" given as its habitat, it may only have been shipped from that island, and really been a native of another belonging to the Archipelago. However this may be, it is quite certain that there is nothing either in Petiver's figure, or in Linnæus' description, that would enable any one in the remotest degree to recognize the MACACUS PHILIPPINENSIS E. Geoff. Therefore as Linnæus' description is utterly useless for the identification of any species of Macaque, and Petiver's figure is worse, it does not seem wise to endeavor to apply Linnæus' proposed name and thus leave the question always in doubt, especially when the types of PHILIPPINENSIS and *palpebrosus* E. Geoff., are in the Paris Museum, and there is no question as to the species thus named. It would seem to be far better to embrace a certainty, than to adopt a doubt, which would leave the question always a subject for argument, with no possibility of ever arriving at a satisfactory decision. Linnæus' *syrichta* is therefore considered as undeterminable, and *syrichta* Thomas, (nec Linnæus), is made a synonym of E. Geoffroy's species.

PITHECUS PHILIPPINENSIS APOENSIS (Mearns).

Cynomolgos (!) *mindanensis apoensis* Mearns, Proc. U. S. Nat. Mus., XXVIII, 1905, p. 429.

Type locality. Mount Apo, Island of Mindanao, Philippine

Islands. Altitude 6,000 feet. Type in United States National Museum.

Color. "Upper parts yellowish olive, the hairs everywhere annulated with blackish; top of head slightly washed with burnt umber; sides of head pale olivaceous gray, separated from the crown by a fringe of strong, stiff black hairs; face gray; under parts whitish smoke gray; genitals bistre; outer surface of limbs pale yellowish olive, changing to olive gray on lower portion, and on hands and feet; upper side of tail slate black at base, fading to mouse gray on terminal half, and smoke gray on under side."

Measurements. "Skull: greatest length, 107; greatest breadth, 58; total length, 925; tail, 400; foot, 115."

This is a female, and in color, with the exception of the hands and feet which are lighter, it is exactly like P. CAGAYANUS, and at present it is impossible to give it any definite status, but it will probably prove to be the same as *P. mindanensis* = P. PHILIPPINENSIS I. Geoff.

PITHECUS CAGAYANUS (Mearns).

Cynomolgos (!) *cagayanus* Mearns, Proc. U. S. Nat. Mus., XXVIII, 1905, p. 431.

SULU ISLAND MACAQUE.

Type locality. Cagayan, Island of Sulu, Sulu Sea (near Borneo). Type in United States National Museum.

Color. From alcoholic specimen. "Upper parts olive brown, with hardly a trace of chestnut or burnt umber on the head; sides of head brownish gray, face smoke gray; forehead grayish in front, behind which a crest of stiff black hair arises; under parts pale drab gray; outer surface of limbs like the back above, but fading at the knee and elbow joints to drab gray upon the forearms, hands, legs and feet; tail above slate black at base, fading to mouse gray toward the end, and drab gray on the under side."

Measurements. Skull: greatest length, 110; greatest breadth, 55. Size, smallest of Philippine Macaques.

The skull measures the same as the skulls of P. PHILIPPINENSIS. Total length, 110; Hensel, 81; zygomatic width, 77; palatal length, 46; breadth of braincase above roots of zygomata, 55; median length of nasals, 26.1; length of upper molar series, 28.4; length of mandible, 80.8; length of lower molar series, 37.5. Ex type United States National Museum.

The above alcoholic specimen has been made up into a skin, and in color is precisely like the example called *apoensis* by Dr. Mearns, except that the feet and hands are darker. The distance separating the Sulu Island Cagayan, in the Sulu Sea near Borneo, from Luzon and Mindanao, favors the supposition that the Macaque is distinct from the Philippine, P. PHILIPPINENSIS.

PITHECUS PUMILUS (Miller).

Macacus pumilus Miller, Proc. Wash. Acad. Scien., II, 1900, p. 241.

Type locality. Pulo Bunoa, Tambelan Islands. Type in United States National Museum.

Genl. Char. Size small, tail longer than head and body.

Geogr. Distr. Pulo Bunoa and Pulo Wai, Tambelan Islands; and Pulo Siantan and Jimaja, Anambas Islands.

Color. Superciliary stripe grayish white; face covered with dark grayish brown hair; space between and above eyes flesh color; head above, hind neck, and upper parts of body, ochraceous rufous and black; outer side of thighs similar but paler; outer side of arms ochraceous buff and black; sides of neck, throat, under parts and inner side of limbs yellowish white; tail at base above, like back, grading into olive gray, beneath yellowish white; hands like outer side of arms; feet like outer side of legs, a smoky buff. Ex type in United States National Museum.

Measurements. Total length, 990; tail, 559; foot, 120. Skull: total length, 110; occipito-nasal length, 90; intertemporal width, 38; Hensel, 77.1; median length of nasals, 20.3; palatal length, 40.8; length of upper molar series, 39.2; length of mandible, 79.5; length of lower molar series, 35.9.

This is a small Macaque with the coloring on the upper parts similar to ERYTHROCEBUS, a rich dark tawny and black hues mingled.

PITHECUS SULUENSIS (Mearns).

Cynomolgos (!) *suluensis* Mearns, Proc. U. S. Nat. Mus., XXVIII, 1905, p. 430.

Type locality. Crater Lake Mountain, Island of Sulu, Philippine Islands.

Color. None given. "Larger than *P. mindanensis* and differently colored?"

Measurements. Skull: "greatest length, 126; greatest breadth, 58; unique cranium." Total length, 126; occipito-nasal length, 107.2; Hensel, 90.4; zygomatic width, 88.6; intertemporal width, 40.4; palatal length, 48.9; median length of nasals, 27.8; length of upper tooth row, 28.7; length of mandible, 90.9; length of lower molar series, 36.2. Ex type in United States National Museum. (Skull, no skin).

The skull is that of an adult male, but the material is altogether inadequate to determine satisfactorily the correct status of the example.

GENUS IV. CERCOCEBUS. THE MANGABEYS.

$$I.\ \frac{2-2}{2-2};\quad C.\ \frac{1-1}{1-1};\quad P.\ \frac{2-2}{2-2};\quad M.\ \frac{3-3}{3-3}=32.$$

CERCOCEBUS E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 97. Type *Cercocebus fuliginosus* E. Geoffroy, = *Simia æthiops* Schreber.

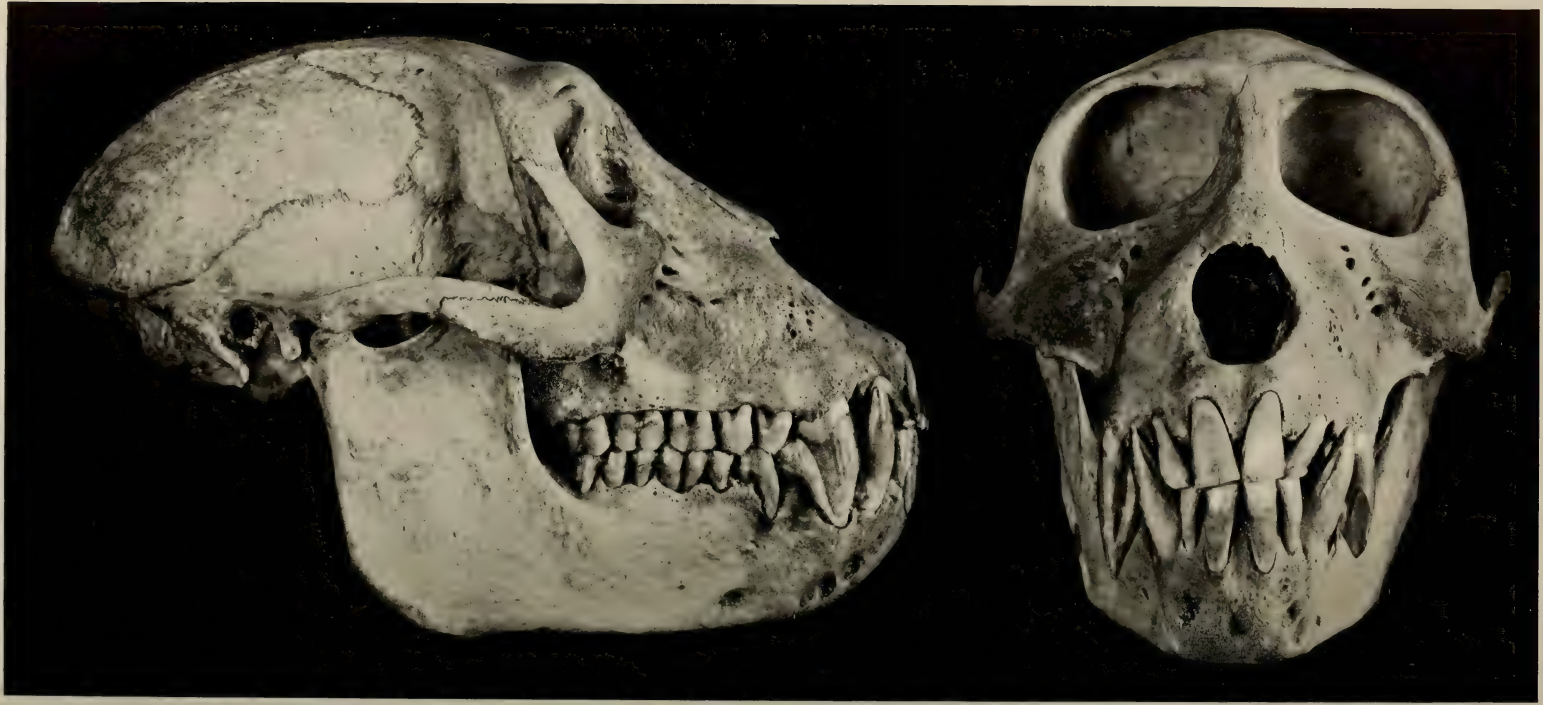
Semnocebus (nec Less.), Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 27.

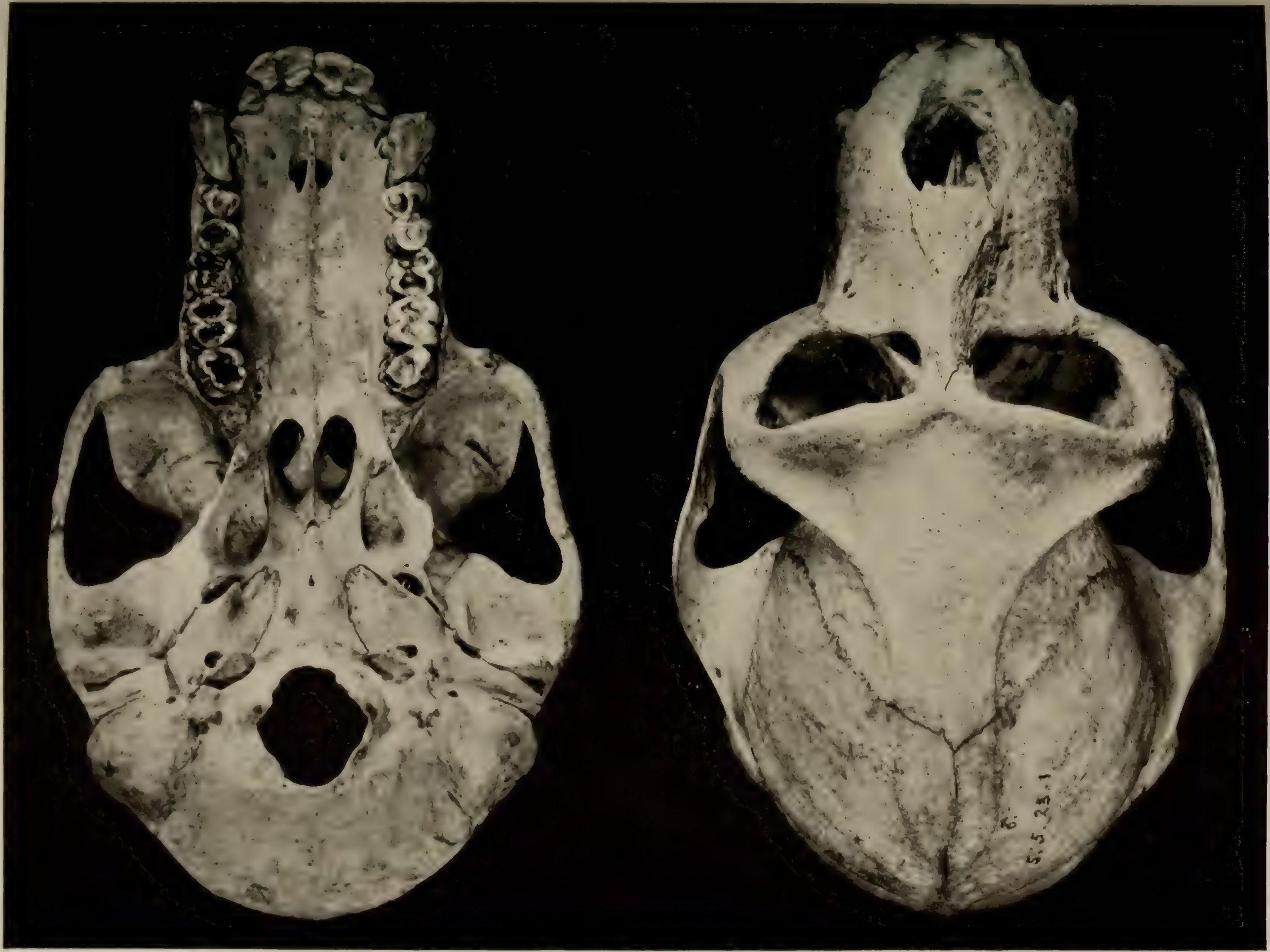
Lophocebus Palmer, Science, XVII, New Series, 1903, p. 873.

Body slender; head oval; muzzle of moderate length; limbs long; callosities large; tail long; cheek pouches large; fingers webbed at bottom; great toe united by a short web to the next one; second and third toes united for nearly their entire length, and the fourth is united to the third and fifth on either side as far as the middle joints. Posterior lower molars have a fifth posterior cusp as in PITHECUS. Facial line straight; premaxillaries not protuberant, on same line as face; zygomatic arch high above or below alveolar border of molars.

The Mangabeys constitute a small group of Monkeys that range from the west to the east coast of Africa, from Guinea and the Congo basin to Uganda and the Tana River. These animals form a kind of connecting link between the Macaques of the genus PITHECUS and the members of the genus LASIOPYGA, through the genus RHINOSTIGMA. They are lighter in body and more slender in form than the Macaques, and have shorter noses, brows less overhanging and larger callosities as a rule than the species of PITHECUS, also have longer limbs, and like them have a fifth cusp to the last lower molars. The stomach is simple and the cheek pouches are large, but the laryngeal air sacs are wanting.

A prominent peculiarity is the webbing of the digits, and each finger and toe is united to the one next to it, but in a different degree, for while the thumb and index finger, and the great toe and its neighbor are united by a very short web, the second and third toes are connected for nearly their entire length. The tail is very long; and the eyelids white; and the species lack the brilliant colors that are not infrequently witnessed in species of LASIOPYGA. They are arboreal in their habits, and dwell in the dense forests that cover the region in which they are





Cercocebus torquatus.

No. 5.5.23.1. Brit. Mus. Coll. ⅘ Nat. Size.

found. One species, however, has been observed to descend to the ground to seek food.

Some species have a very sombre coat, and their young are black, and the appearance of the animals in their progress from the youthful to the adult pelage has produced considerable confusion among writers when discussing these Monkeys, ending with the recognition of a number of invalid species, and resultant errors. The disposition of the Mangabeys appears to be gentle; their activity is never ceasing, and they are in the habit of "making faces," or grinning at the observer, exhibiting at the same time a liberal display of teeth. The species are easily arranged into two groups, characterized by the presence or absence of a crest on the head. The non-crested species are possessed of brighter colors, or the strong contrasts produced by a distribution of black and white; while those with crests have a more subdued dress in which grays and browns are conspicuous, but the bright colors, although altogether wanting save in some instances, are more conspicuous when existing, on the under parts of the body.

LITERATURE OF THE SPECIES AND SUBSPECIES.

1775. *Schreber, Die Säugthiere.*
CERCOCEBUS ÆTHIOPS is here first described as *Simia æthiops* (nec Linn.).

1792. *Kerr, Animal Kingdom. Mammalia.*
CERCOCEBUS TORQUATUS first described as *Simia æthiops torquatus.*

1799. *Audebert, Histoire Naturelle des Singes et des Makis.*
Simia æthiops Schreb., and *S. æthiops* (nec Linn.), var A. the latter afterwards called *æthiopicus* by F. Cuv., 1821 = C. ÆTHIOPS (Schreb.), and *C. atys, albino,* undeterminable, are given in this book.

1812. *E. Geoffroy St. Hilaire, in Annales du Muséum d'Histoire Naturelle, Paris.*
CERCOCEBUS ÆTHIOPS Schreb., redescribed as *C. fuliginosus;* the remaining species under CERCOCEBUS given by this Author, belong to other genera. *C. atys, albino,* possibly C. ÆTHIOPS (Schreb.), but really undeterminable.

1820. *Kuhl, Beiträge zur Zoologie und vergleischenden Anatomie.*
The species of CERCOCEBUS recorded by this Author are placed in the genus *Cercopithecus,* (LASIOPYGA), which includes species

now considered to belong to various genera, as well as to LASIOPYGA. The species of CERCOCEBUS are: (*C.*) *atys* undeterminable; C. ÆTHIOPS (Schreber), and *C. fuliginosus* Geoff., also = C. ÆTHIOPS (Schreber).

1820. *Desmarest, Mammalogie ou Description des Espèces de Mammifères.*
Like the previous Author, the present one includes the species of CERCOCEBUS in CERCOPITHECUS = (LASIOPYGA), as follows: (*C.*) *fuliginosus* = C. ÆTHIOPS (Schreber); C. ÆTHIOPS (Schreber); *C. æthiopicus* F. Cuv., = C. ÆTHIOPS (Schreb.); and *C. atys* possibly an albinistic individual of C. ÆTHIOPS, but undeterminable.

1821. *F. Cuvier, Histoire Naturelle des Mammifères.*
CERCOCEBUS TORQUATUS (Kerr), redescribed as *Cercopithecus æthiopicus,* the name however attributed to M. Geoffroy St. Hilaire, but I have not found that either E. or I. Geoffroy employed this name for the species.

1829. *Fischer, Synopsis Mammalium.*
Two species of CERCOCEBUS are here given as SIMIA ÆTHIOPS Schreb.; *S. fuliginosus* = *C. æthiops* (Schreb.).
The synonymy is badly mixed and incorrectly given.

1838. *J. E. Gray, in Proceedings of the Zoological Society of London.*
CERCOCEBUS ALBIGENA first described as *Presbytis albigena.*

1840. *Wagner, Schreber, Die Säugthiere in Abbildungen nach der Natur mit Beschreibungen. Supplementband.*
In the genus *Cercopithecus* (LASIOPYGA), two species of CERCOCEBUS are included; *C. fuliginosus* Geoff., = C. ÆTHIOPS (Schreb.), nec *Simia æthiops* Linn., which is not a CERCOCEBUS.

1840. *R. P. Lesson, Species Mammifères Bimanes et Quadrumanes.*
The members of the genus CERCOCEBUS are included in the genus *Cercopithecus.* They are (*C.*) *æthiops* = C. TORQUATUS (Kerr); and *C. fuliginosus* = C. ÆTHIOPS (Schreber).

1851. *I. Geoffroy St. Hilaire, Catalogue des Primates.*
Three species are here given. *C. collaris* = C. TORQUATUS (Kerr); *C. æthiops* (nec Schreber), = C. TORQUATUS (Kerr); C. LUNULATUS Temm.; and *C. fuliginosus* = C. ÆTHIOPS (Schreber).

1853. *Temminck, Esquisses Zoologiques sur la Côte de Guinée.*
CERCOCEBUS LUNULATUS first described as *Cercopithecus lunulatus.*

1855. *Wagner, Schreber, Die Säugthiere in Abbildungen nach der Natur mit Beschreibungen. Supplementband.*
In this work CERCOCEBUS is made subgenus 3 of *Cercopithecus* and contains three species viz., *C. fuliginosus* = C. ÆTHIOPS (Schreb.) ; *C. collaris* = C. TORQUATUS (Kerr) ; and *C. æthiops* (nec Schreber), = C. TORQUATUS (Kerr).

1862. *Reichenbach, Die Vollständigste Naturgeschichte der Affen.*
In this work the genus CERCOCEBUS is made a subgenus of *Cercopithecus* and has the following species: *C. fuliginosus* = C. ÆTHIOPS (Schreber) ; *C. æthiops* Geoff., = C. TORQUATUS (Kerr) ; and *C. collaris* Gray, = C. TORQUATUS (Kerr).

1870. *J. E. Gray, Catalogue of Monkeys, Lemurs and Fruit-eating Bats, in the Collection of the British Museum.*
Four species of CERCOCEBUS are here given: *C. æthiops* (nec Schreb.), = C. LUNULATUS Temm.; *C. fuliginosus* = C. ÆTHIOPS (Schreber) ; *C. collaris* = C. TORQUATUS (Kerr) ; and C. ALBIGENA.

1876. *Schlegel, Muséum d'Histoire Naturelle des Pays-Bas, Simiæ.*
The genus CERCOCEBUS is here made to contain the species then known that properly belong to it, as well as some species of PITHECUS. The CERCOCEBI are *C. fuliginosus* = C. ÆTHIOPS (Schreb.) ; *C. æthiops* (nec Schreb.), = C. LUNULATUS Temm., (nec Synon.) ; *C. collaris* = C. TORQUATUS (Kerr) ; and C. ALBIGENA.

1879. *Peters, Monatsberichte Königliche Akademie der Wissenschaften, Berlin.*
CERCOCEBUS GALERITUS first described.

1886. *E. Rivière, in Revue Scientifique.*
CERCOCEBUS AGILIS first described.

1890. *Oudemans, in Zoologische Garten.*
CERCOCEBUS ATERRIMUS first described as *Cercopithecus aterrimus.*

1896. *E. de Pousargues, in Annales des Sciences Naturelles.*
A review of a few of the species of CERCOCEBUS, and a discussion of the relationships of C. AGILIS, and C. GALERITUS. The species included are *C. collaris* = C. TORQUATUS; C. ALBIGENA of which C. ATERRIMUS Oud., is made a synonym, and C. AGILIS, which is regarded as distinct from C. GALERITUS.

1899. *Sclater, in Proceedings of the Zoological Society of London.*
CERCOCEBUS ATERRIMUS redescribed as *Cercocebus congicus,* an albino.

1900. *Lydekker, in Novitates Zoologicæ.*
CERCOCEBUS CHRYSOGASTER; C. HAGENBECKI; *C. albigena johnstoni,* first described; and C. ATERRIMUS redescribed as *C. a. rothschildi.*

1906. *Pocock, in Annals and Magazine of Natural History.*
CERCOCEBUS ATERRIMUS redescribed as *C. hamlyni,* and *Cercocebus a. johnstoni* redescribed as *C. jamrachi;* and in a subsequent paper he reviews the species of the genus, recognizing ten with three doubtful. They are: *C. fuliginosus* = C. ÆTHIOPS (Schreb.); C. LUNULATUS; *C. æthiopicus* (Cuv.), = C. TORQUATUS (Kerr); C. CHRYSOGASTER; C. HAGENBECKI; C. AGILIS; C. GALERITUS; C. ALBIGENA, with *aterrimus rothschildi,* and *a. johnstoni,* somewhat doubtful. *C. congicus* and *C. hamlyni* both = C. ATERRIMUS.

1910. *E. Schwarz, in Annals and Magazine of Natural History.*
A paper on C. ATERRIMUS and C. ALBIGENA and their synonyms. The Author discusses the specific values of *C. congicus, C. hamlyni,* and *C. rothschildi,* and decides that they are merely albinistic individuals of C. ATERRIMUS Oudemans, as regards the first two, and the third is not to be distinguished from the same species. Also *C. jamrachi* is an albino of *C. a. johnstoni.* C. ALBIGENA and C. ATERRIMUS are compared and their specific differences shown.

1911. *Schwarz, in Sitzungsberichte der Gesellschaft Naturforschender Freunde, Berlin.*
Cercocebus albigena zenkeri first described.

GEOGRAPHICAL DISTRIBUTION OF THE SPECIES AND SUBSPECIES.

The species of the genus CERCOCEBUS are African and so far as is known are about equally divided between the eastern and western parts of the continent. In East Africa the most northerly species is C. GALERITUS, which is found in the vicinity of the Tana River, its range, like those of many of its relatives not yet determined. From Uganda and Lake Mweru to the Upper Congo *C. a. johnstoni* is met with. In various places along the Congo, the exact localities yet to be ascertained, the following species have been procured. C. CHRYSOGASTER on the "Congo"; C. HAGENBECKI, locality given as "Upper Congo"; C. ALBIGENA "Lower Congo"; *C. a. zenkeri,* at Bifindi, Cameroon; and C. ATERRIMUS, "Central Congo Basin." In Nigeria C. TORQUATUS is met with ranging south and east through Cameroon into

French Congo, and in the last named territory, at the junction of the Oubangui and Congo rivers, C. AGILIS is found. In Sierra Leone and Liberia, C. ÆTHIOPS is met with; and lastly on the Gold Coast, range unknown, C. LUNULATUS was obtained. It will be seen from the above, that the habitats of some of the species are either guessed at or unknown, and much remains to be learned of the dispersion of the members of this genus.

KEY TO THE SPECIES.

- A. No crest on head.
  - *a.* Color of hairs on body uniform.
    - *a.'* Top of head reddish chestnut .... *C. torquatus.*
    - *b.'* Top of head speckled yellow and blackish brown .... *C. æthiops.*
    - *c.'* Top of head with a white patch .... *C. lunulatus.*
  - *b.* Color on head, limbs and fore part of body speckled.
    - *a.'* No brow fringe .... *C. chrysogaster.*
    - *b.'* With brow fringe.
      - *a.''* Hairs on sides of head not falling over ears.
        - *a.'''* With yellow on flanks and under parts .... *C. agilis.*
        - *b.'''* No yellow on flanks and under parts .... *C. hagenbecki.*
      - *b.''* Hairs on sides of head falling over ears .... *C. galeritus.*
- B. Crest, or tuft on head.
  - *a.* Face black.
    - *a.'* Whiskers short, superciliary fringe present.
      - *a.''* Gray tinge on mantle .... *C. albigena.*
      - *b.''* No gray tinge on mantle .... *C. a. johnstoni.*
      - *c.''* Mantle light brownish gray .... *C. a. zenkeri.*
    - *b.'* Whiskers long; no superciliary fringe ..... *C. aterrimus.*

Subgenus Cercocebus.

No crest; hairs short; zygomatic arch high above alveolar border of molars.

Cercocebus torquatus (Kerr).

Mangabey à collier blanc Buffon, Hist. Nat. XIV, p. 256, pl. III.

Simia æthiops torquata Kerr, Anim. Kingd., 1792, No. 39.

Cercocebus æthiops (nec Linn. nec Schreb.), E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 97; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 125.

Cercopithecus æthiops (nec Linn. nec Schreb.), Kuhl, Beitr. Zool., 1820, p. 13; Desm., Mamm., 1820, p. 62; E. Geoff., Cours Hist. Nat. Mamm., 1828, p. 20, 8me Leçon; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 126, tab. XXI; Pocock, Ann. Mag. Nat. Hist., XVII, 7th Ser., 1906, p. 280.

Cercopithecus æthiopicus F. Cuv., Hist. Nat. Mamm., II, Livr. XXXV, p. 182; 2nd ed., 1833, p. 71, pl. XXIV.

Cercopithecus (*Cercocebus*) *æthiops* Martin, Proc. Zool. Soc. Lond., 1838, p. 117; Reichenb., Vollständ. Naturg. Affen, 1862, p. 104.

Cercocebus collaris Gray, List Spec. Mamm. Brit. Mus., 1843, p. 7; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 27; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 96; Forbes, Handb. Primates, II, 1894, p. 38; Pousarg., Ann. Scien. Nat., III, 1896, p. 228; Bedd., Proc. Zool. Soc. Lond., 1904, p. 161, (Brain).

Pithecus (*Cercocebus*) *æthiops* Dahlb., Stud. Zool. Fam. Reg. Anim. Nat., fasc. I, 1856, p. 115.

Pithecus (*Cercocebus*) *collaris* Dahlb., Stud. Zool. Fam. Reg. Anim. Nat., fasc. I, 1856, p. 115.

Cercopithecus (*Cercocebus*) *collaris* Reichenb., Vollständ. Naturg. Affen, 1856, p. 104, figs. 248-250.

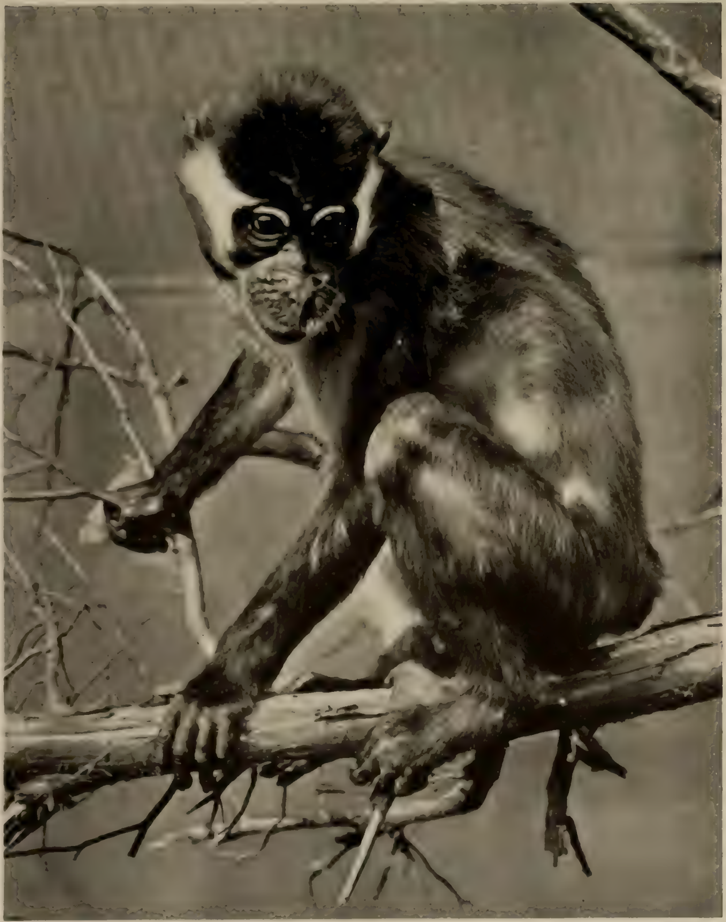
WHITE-COLLARED MANGABEY.

Type locality. "l'Ethiopie."

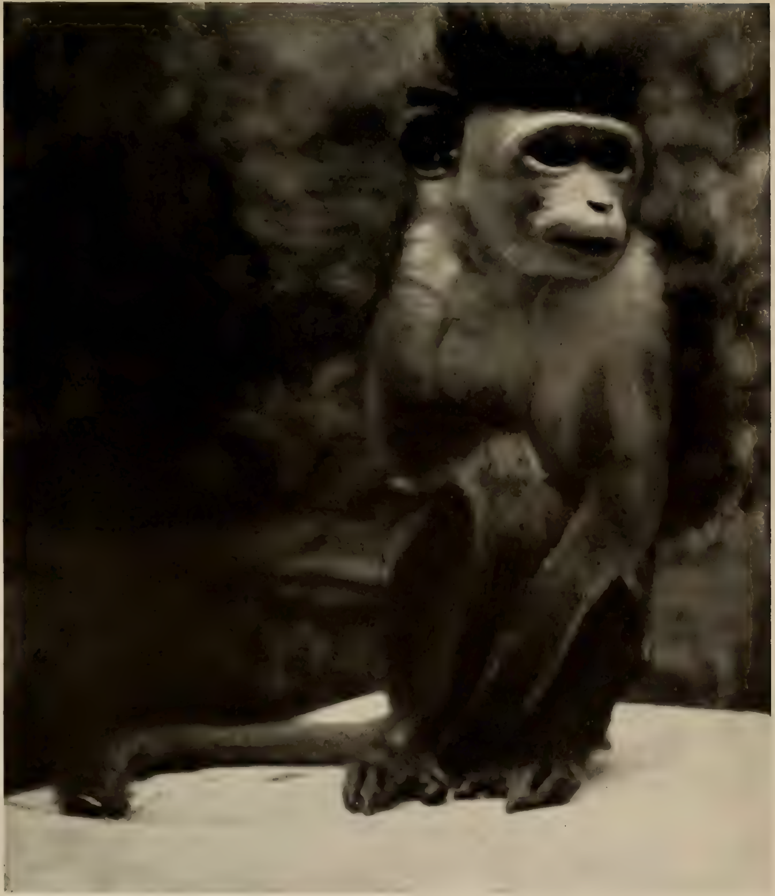
Geogr. Distr. West Africa, Nigeria, Cameroon, and French Congo.

Genl. Char. Hair on crown thick, directed backward, short; whiskers rather long, extending behind ears; tail long; eyelids white.

Color. Top of head reddish chestnut, beneath which on side of head is a band of pure white; upper part of whiskers soiled white, lower part gray; hind neck pure white; dorsal line jet black; rest of upper parts, shoulders and lower side of legs, purplish brown; outer side of arms and hands jet black; feet brownish black; chin and throat white; rest of under parts buffy white; inner side of legs yellowish white; tail black, apical portion white.



Cercocebus torquatus.



Cercocebus albigena.

Measurements. Total length, 1,450; tail, 535; foot, 170. Skull: total length, 141.5; occipito-nasal length, 119; intertemporal width, 47.4; width of braincase, 68.2; Hensel, 54.5; zygomatic width, 90.7; median length of nasals, 37.5; palatal length, 56.5; length of upper molar series, 36.4; length of upper canines, 23.1; length of mandible, 96; length of lower molar series, 44.3.

Great confusion has existed in the nomenclature of this and the next species arising from two causes, one, the vain efforts of Authors to employ the Linnæan name *æthiops,* which was given to an undeterminable species of LASIOPYGA, for this or the following species, and the other, the ignoring of Schreber's name *æthiops,* bestowed upon the Mangabey, called by E. Geoffroy some thirty-two years later, *fuliginosus.* As I show in the review of the Linnæan literature of LASIOPYGA, *Simia æthiops* Linn., must be ruled out of court, as having no standing, for although it probably belongs to the Petaurista or Æthiops groups in that genus, yet the species it represents is quite undeterminable.

Bates, states (l. c.) that, in southern Cameroon, "Monkeys of this species are not rare, but are often killed. They differ from those of the common kind in that they often descend to the ground to feed. Their call is very different from that of the *Cercopithecus,* (LASIOPYGA), monkeys. It is rather shrill and ends in an after sound like that made while drawing in the breath or gasping." Kerr was the first to bestow a Latin name on this species, founding it on the *"Mangabey à collier blanc"* of Buffon and called it *Simia æthiops torquata.*

CERCOCEBUS ÆTHIOPS (Schreber).

Simia æthiops (nec Linn.), Schreb., Säugth., I, 1775, p. 105, pl. XX; Audeb., Hist. Nat. Singes et Makis, 1799, Fam. IV, Sec. II, pl. X.

Cercocebus fuliginosus E. Geoff., Ann. Mus. Hist. Nat. Paris, XIX, 1812, p. 97; I. Geoff., Cat. Primates, 1851, p. 25; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 125, tab. XX; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 27; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 95; Sclat., Proc. Zool. Soc. Lond., 1878, p. 791; Ottley, Proc. Zool. Soc. Lond., 1879, p. 125; Anders., Cat. Mamm. Ind. Mus. Calc., Pt. I, 1881, p. 59; Forbes, Handb. Primates, II, 1894, p. 37; Bedd., Proc. Zool. Soc. Lond., 1904, p. 161; Elliot, Cat. Mamm. Field Columb. Mus., F. C. M. Pub., VIII, 1906, p. 568, Zool. Ser.; Pocock, Proc. Zool. Soc. Lond., 1906, p. 358.

Le Mangabey F. Cuv., Hist. Nat. Mamm., Livr. VI, 1819, pl. XXXII.

Cercopithecus fuliginosus Kuhl, Beitr. Zool., 1820, p. 24; E. Geoff., Cours Hist. Nat. Mamm., p. 20, 8me Leçon; Cuv., Hist. Nat. Mamm., 2nd ed., 1833, p. 75, pl. XXV; Less., Spec. Mamm., 1840, p. 87; Wagn., Schreb., Säugth. Suppl., I, 1840, p. 125; V, 1855, p. 51.

Simia fuliginosus F. Cuv., Hist. Nat. Mamm., XXXV, 1821, pl. CCV.

Cercopithecus (*Cercocebus*) *fuliginosus* Martin, Proc. Zool. Soc. Lond., 1838, p. 117; Reichenb., Vollständ. Naturg. Affen, 1862, p. 104, figs. 244, 247.

Pithecus (*Cercocebus*) *fuliginosus* Dahlb., Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, p. 115.

SOOTY MANGABEY.

Type locality. None given. E. Geoffroy's type of *C. fuliginosus* not in Paris Museum.

Geogr. Distr. Sierra Leone, Liberia, West Africa.

Genl. Char. Hair on crown short, directed backward; face and ears naked; eyelids white.

Color. Top of head speckled yellow and brownish black; sides of head blackish; general color of body and limbs sooty or sooty black, nearly black on dorsal region; lower part of forearms, hands and feet black; under parts ashy or yellowish gray; tail, upper parts blackish, rest sooty; face of a brownish color; eyelids white.

Measurements. Total length, 1,016; tail, 546.10; foot, 215.60. Skull: total length, 119; occipito-nasal length, 96; Hensel, 81; zygomatic width, 73; intertemporal width, 47; palatal length, 48; breadth of braincase, 63; median length of nasals, 19.5; length of upper molar series, 34; length of mandible, 74; length of lower molar series, 37.

The type of E. Geoffroy's species is not to be found in the Paris Museum, the oldest there being one which died in the Menagerie in 1821, nine years after the species was described, but no indication given as to whether it was the type or not. The type of *C. atys* Audebert is in the Paris Museum, a perfectly white animal, with no locality save 'Afrique occidentale,' and half the tail gone. It may be C. ÆTHIOPS, albino, but no accurate determination is possible. Mr. Pocock contends (l. c.) that the name ÆTHIOPS cannot be given to a Mangabey because Linnæus had already employed the name in 1758.

But Linnæus' *Simia æthiops* is a LASIOPYGA, and has nothing to do with the members of the present genus, and there is no law known that forbids the same specific name to be given to two species of different genera. C. ÆTHIOPS (Schreb.), is therefore perfectly applicable to a CERCOCEBUS, and ÆTHIOPS Linnæus to a LASIOPYGA, if the species can be determined, which in this case, unfortunately cannot be, and the confusion that has existed among Authors in regard to this name, has arisen from the supposition that Linnæus and Schreber referred to animals in the same genus, which is not the fact.

CERCOCEBUS LUNULATUS Temminck.

Cercocebus æthiops I. Geoff., Cat. Primates, 1851, p. 25, (nec E. Geoff.) ; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 27.

Cercopithecus lunulatus Temm., Esquis. Guin., 1853, p. 37.

Cercocebus lunulatus De Winton, in Anders., Zool. Egypt., Mamm., 1902, p. 15; Pocock, Ann. Mag. Nat. Hist., XVIII, 7th Ser., 1906, p. 279; *Id.* Proc. Zool. Soc. Lond., 1906, p. 358.

WHITE-CROWNED MANGABEY.

Type locality. "Æthiopia."

Geogr. Distr. Gold Coast, West Coast of Africa.

Genl. Char. Similar to, but darker above than *C. æthiops* (Schreber), with a grayish white spot on occiput, and a narrow black line along the back of the same; eyelids white.

Color. Face flesh color; top of head blackish brown; a large yellowish white patch on back of head; side of head yellowish white; upper part of body and outer side of limbs brownish drab with a purplish tinge; under parts and inner side of arms yellowish white; tail above black, beneath like body; hands and feet Vandyke brown.

Measurements. Total length, 3 ft. 4 in.; tail, 1 ft. 7 in. Skull: total length, 121; occipito-nasal length, 93; Hensel, 82; zygomatic width, 78; intertemporal width, 45; median length of nasals, 16; length of upper molar series, 35; length of mandible, 76; length of lower molar series, 41.

Pocock, (l. c.) and all subsequent Authors make this species the same as *C. æthiops* Geoffroy, (E. Geoffroy I suppose is intended). This is not the fact, for the *C. æthiops* E. Geoffroy, is the *Mangabey à collier blanc* of Buffon, the C. TORQUATUS of Kerr; while the *C. æthiops* I. Geoffroy is the *C. lunulatus* of Temminck. The type of C. LUNULATUS Temm., is not in the Leyden Museum, nor any specimen bearing that name.

CERCOCEBUS CHRYSOGASTER Lydekker.

Cercocebus chrysogaster Lydekk., Novit. Zool., VII, 1900, p. 279, pl. III; Pocock, Ann. Mag. Nat. Hist., XVIII, 7th Ser., 1906, p. 280.

Cercocebus fuliginosus Rothsch., Novit. Zool., VII, 1900, p. 279, (nec E. Geoff.).

GOLDEN-BELLIED MANGABEY.

Type locality. Upper Congo. Type in Tring Museum.

Geogr. Distr. Unknown.

Genl. Char. Hairs on crown annulated; under parts orange.

Color. Crown light olive, speckled, caused by the dark and yellow rings on the hairs; upper parts similar, but less speckled on hinder and lateral portions; flanks and outer sides of limbs and tail slate gray speckled like back; sides of head and under parts from chin to tail golden yellow; inner surface of limbs pale slate gray; tail above at base like back, rest gray, beneath grayish white at base, rest gray; hands grayish brown speckled with gray; feet slate gray speckled with yellow. Ex type Tring Museum.

Measurements. Total length, 790; tail, 430; foot, 130.

CERCOCEBUS AGILIS E. Rivière.

Cercocebus agilis E. Rivière, Rev. Scient., XII, 1886, p. 15; Pousarg., Ann. Scien. Nat., Zool., III, 7me Sér., 1896, pp. 229-235; Trouess., Le Natural., 1897, p. 9; Pocock, Ann. Mag. Nat. Hist., XVIII, 7th Ser., 1906, p. 282.

AGILE MANGABEY.

Type locality. Confluence of the Oubangui and Congo. "French Congo, Poste des Ouaddes." Type in Paris Museum.

Geogr. Distr. French Congo. Range unknown.

Genl. Char. Hair radiating from a point over eyebrows, some hairs directed forward.

Color. Top of head, hairs blackish brown tipped with yellow, this being the general color; upper parts and sides of body, pale reddish brown, hairs tipped with yellow and gray at base; limbs darker brown, hairs tipped with yellowish giving them a speckled appearance; blackish at point of shoulder and on knees; outer side of thigh and inner side of limbs pale yellow or yellowish white; hands and feet black; a white band along side of face formed by the color at base of hairs; whiskers and side of head dark mummy brown, hairs tipped with yellow; under parts yellowish white; tail blackish brown at base on top, remainder grayish brown tinged with red. Ex type Paris Museum.

Measurements. Total length, 660.40; tail, 628.65; foot, 127. Skull: total length, 117; occipito-nasal length, 104; Hensel, 78; zygomatic width, 74; intertemporal width, 46; breadth of braincase, 63; palatal length, 47; median length of nasals, 21; length of upper molar series, 31; length of mandible, 80; length of lower molar series, 38.

CERCOCEBUS HAGENBECKI Lydekker.

Cercocebus hagenbecki Lydekk., Novitat. Zool., VII, 1900, p. 594, desc.; VIII, 1901, pl. I, fig. 1; Pocock, Ann. Mag. Nat. Hist., XVIII, 7th Ser., 1906, p. 281.

HAGENBECK'S MANGABEY.

Type locality. "Upper Congo," locality unknown. Type in Tring Museum.

Genl. Char. Upper eyelids dark in young; sometimes pale or flesh color; thumb short; face black; callosities reddish; hairs on head radiating from central point, those directed forward forming a post superciliary fringe.

Color. Upper parts light slaty gray; on the head, back, outer side of limbs, and the upper surface of tail, some hairs are ringed black and tawny; inner side of limbs pale grayish white, some hairs tipped with bright yellow; tail at base black, rest of upper part slate gray, beneath paler; hands black. Ex adult British Museum.

Measurements. Total length, 737; tail, 407; foot, 123; ear, 32.5. Skull: total length, 135, (110.8); occipito-nasal length, 115, (97.6); Hensel, 94, (70); zygomatic width, 85, (67.7); palatal length, 58, (41.8); intertemporal width, 51, (49.9); median length of nasals, 30, (10); length of upper molar series, 35, (32.3); length of mandible, 88, (73); length of lower molar series, 42, (36). The figures in parentheses are the measurements of the type.

The type is a young animal, the molars not having assumed their positions in the jaws. The measurements of the skull as will be seen, are considerably exceeded in the adult, of which there are two specimens in the British Museum. They differ from the young in color, in having the head and back more tawny, the yellow markings of the young having changed to tawny. In other respects they are alike, with no yellow beneath.

CERCOCEBUS GALERITUS Peters.

Cercocebus galeritus Peters, Monatsb. K. Preuss. Akad. Wiss., Berlin, 1879, p. 830, pls. IB, III; Forbes, Handb. Primates, II, 1895, p. 41; Pocock, Ann. Mag. Nat. Hist., XVIII, 7th Ser., 1906, p. 283.

CRESTED MANGABEY.

Type locality. Miatola, mouth of the Osi and Tana rivers, East Africa. Type in Berlin Museum.

Geogr. Distr. East Africa; Tana and Osi rivers.

Genl. Char. Hairs of head very long covering the ears, radiating from a point near frontal ridge; no *V*-shaped partition as shown in Peters' figure; general color pale brown; tail long; hairs on forehead projecting forward.

Color. Hairs on top of head long, falling over ears, blackish brown; upper parts and sides of body, arms to elbows and legs dark hair brown, the hairs light gray at base and banded with black and buff; sides of head brownish yellow, sides of neck, throat, under parts and inner side of limbs yellowish white tinged with brown; forearms blackish brown speckled with buff; hands and feet blackish brown. Ex type Berlin Museum.

Measurements. Total length, 1,350; tail, 730. Ex mounted specimen, type Berlin Museum. Skull: total length, 121.5; occipitonasal length, 103; Hensel, 85; intertemporal width, 46; zygomatic width, 84; median length of nasals, 20; length of upper molar series, 30.5; length of mandible, 90; length of lower molar series, 39. Ex type Berlin Museum.

Subgenus Lophocebus.

Head crested; hair long; zygomatic arch (jugal), below alveolar border of molars.

CERCOCEBUS ALBIGENA (Gray).

Presbytis albigena Gray, Proc. Zool. Soc. Lond., 1850, p. 77, pl. XVI; Murie, Proc. Zool. Soc. Lond., 1865, p. 740.

Cercocebus albigena Puch., Rev. Zool., 1857, p. 241; Sclat., Proc. Zool. Soc. Lond., 1868, p. 183; 1896, p. 784; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 97; Jent., Cat. Syst. Mamm., 1892, p. 26; *Id.* Proc. Zool. Soc. Lond., 1895, p. 338; Forbes, Handb. Primates, II, 1894, p. 40; Matschie, Säugth. Deutsch. Ost Afr., 1895, p. 6; Pousarg., Ann. Scien. Nat., III, 1896, p. 228; Pocock, Ann. Mag. Nat. Hist., XVIII, 7th Ser., 1906, p. 283.

Cercocebus (*Semnocebus*) *albigena* Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 27.

GRAY-CHEEKED MANGABEY.

Type locality. Congo Free State, West Africa. "Stanley Falls?"

Geogr. Distr. Basin of the Congo, Calinda, mouth of the Congo, (Monteiro); Caio, Luchenye River, north of the Congo, (Sclater); "Stanley Falls"; Victoria Nyanza, (Delmé-Radcliffe).

Genl. Char. Crest on head short, occipital; superciliary fringe present; whiskers grayish; eyelids dark; tufts over eyes; hair very long on neck and shoulders forming a mane; erect tuft on back of head.

Color. Head, body above, limbs and tail black; throat and cheeks pale gray; sides of neck and chest sooty grayish; hands and feet black. Ex type British Museum.

The type is a young animal; it is difficult to say how youthful, as the skull, unfortunately, could not be found. The hair on forehead is erect on each side like horns, far above the rest on the head and is long on the occiput. A similar arrangement of the hair is seen in a specimen from Tanganyika labelled *aterrimus,* and which is probably the young of *C. a. johnstoni,* two adults of which are in the British Museum. In the Paris Museum are three examples of the present species, one of which is fully adult. It has the arms above elbows and outer side of thighs gray; the forearms and outer edge of thighs black. Another has the outer side of limbs, shoulders, sides and back of neck reddish. Length, 1,250; tail, 647.7; foot, 171.4.

CERCOCEBUS ALBIGENA JOHNSTONI Lydekker.

Semnocebus albigena johnstoni Lydekk., Novit. Zool., 1900, p. 596; Sclat., Proc. Zool. Soc. Lond., 1894, p. 595; Pocock, Ann. Mag. Nat. Hist., XVIII, 7th Ser., 1906, p. 284; Schwarz, Ann. Mag. Nat. Hist., 1910, 8th Ser., p. 529.

Cercocebus jamrachi Pocock, Ann. Mag. Nat. Hist., 1906, 7th Ser., p. 454.

JOHNSTON'S MANGABEY.

Type locality. Country of Barundi, north end of Lake Tanganyika, German East Africa. Type in British Museum, juv.

Geogr. Distr. Central Africa, Uganda to West Africa, (Du Chaillu); Uganda and Lake Mweru to Upper Congo, (Schwarz); Lake Tanganyika, German East Africa.

Genl. Char. Head crested as in C. ALBIGENA; tuft of long erect hairs over each eye; superciliary fringe shorter; entire upper parts except neck and shoulders uniformly black. Eyelids dark.

Color. Adult. Long hairs over shoulders and upper part of back forming a short mantle, Prout's brown with a purplish tinge; top of head, upper parts of body, limbs, hands, feet and tail black; under parts dark purplish brown.

Young. All black; shoulders and under parts with a reddish tinge.

Measurements. Skull: total length, 116; occipito-nasal length, 99; Hensel, 81; intertemporal width, 45; zygomatic width, 73; palatal length, 49; median length of nasals, 23; length of upper molar series, 27; length of mandible, 73; length of lower molar series, 33.

The type of this species is a young animal and black all over, similar to C. ATERRIMUS which was also young. The type of this form came from Stanley Falls, and the following description is taken from it.

Color. All black on head, body, limbs, hands, feet and tail; shoulders and under parts tinged with red.

Measurements. Skull: total length, 108; occipito-nasal length, 94; Hensel, 74; zygomatic width, 73; intertemporal width, 49.4; palatal length, 41; median length of nasals, 24; length of mandible, 64; length of upper molar series, 27.

Hair on head long, covering middle portion of the crown; superciliary fringe long; whiskers small, grayish, not concealing the ears; eyelids dark.

Sir Harry Johnston writing to Dr. Sclater about the specimen of this Monkey from Lake Tanganyika (l. c.) states that, "this is the history of the Black Monkey. He was brought from the country of Barundi, at the north end of Tanganyika, by Rumaliza, the Arab who has been fighting recently with the Belgians. Rumaliza gave it at Ujiji to Mr. Swann, then in the service of the London Missionary Society. Mr. Swann brought him down to the south end of Tanganyika and gave him to the Mission Station. The Missionary in charge of the station subsequently hearing that I was collecting all sorts of beasts sent him to me. I got him fetched down from Tanganyika to Zomba, and thence as you know to England. He is undoubtedly a native of the country at the north end of Lake Tanganyika; in other words, of the north eastern border of the great forest region of West Africa. Even there he would seem to have been rare, since he was given by the natives to Rumaliza as a curiosity."

A whitish monkey from Molinga, Lake Mweru, in the London Zoological Gardens was named by Mr. Pocock (l. c.) *jamrachi.* This is undoubtedly an albino, and its locality indicates that it would belong to the eastern race of C. ALBIGENA, and the name therefore becomes a synonym of *C. a. johnstoni.* Specimens of C. ALBIGENA and the present race are rather scarce in collections, and it is unusual among the Primates to find any species so prone to albinism as this one seems to be, therefore, it is not surprising that when individuals with more or less white in their pelage were received they were supposed to represent new forms, especially as the locality whence any one of them came was unknown or uncertain, but the blotched face and hands of *C. congicus,* and face and ears of *C. hamlyni* might have aroused suspicions about their representing distinct species.

CERCOCEBUS ALBIGENA ZENKERI Schwarz.

Cercocebus albigena subsp., Schwarz, Ann. Mag. Nat. Hist., 8th Ser., V, 1910, p. 530.

Cercocebus albigena zenkeri Schwarz, Sitzungsb. Gesellsch. Naturf. Freunde, Berlin, 1910, p. 456.

ZENKER'S MANGABEY.

Type locality. Bifindi on Lokunye River, Cameroon, West Africa. Type in Berlin Museum.

Geogr. Distr. Cameroon, West Africa.

Color. Mane long, light brownish gray, slightly darker between the shoulders; occipital crest brownish, the longest hairs brownish gray; thighs tinged with grayish brown; arms with numerous light hairs, some having light tips; under side of body grayish.

Measurements. Size about the same as C. ALBIGENA. Skull: "Gehirnkapsel von oben gesehen oval mit dem stumpfen Ende hinten. Schläfenenge scharf markiert. Orbita verhaltnismässig klein mit allen vier Ecken ziemlich gleichmässig abgerundet und mit sehr starker Aussenwand. Rostrum mit ziemlich parallelen Randern. Infraorbitalgrube sehr tief und weit, nach unten am breitesten, da dort das Zygomaticum stark nach aussen weicht. Der optische Querschnitt des Schädels ist von hinten gesehen etwa halbkreisförmig und geht unten ganz allmählich beiderseits in den Proc. mastoideus über. Von oben gesehen liegt die vordere Begrenzungslinie der beiden Zygomatica in einer zur Sagittalebene senkrechten Geraden. Das Zygomaticum ist vorn abgerundet. Der untere Rand des Jochbogens erscheint in der Seitenansicht etwa in der Höhe der Zahnwurzel der Molaren, während er bei *C. a. johnstoni* fast bis zum Niveau des Alveolarrandes herabreicht. Der Gaumen hat parallele Ränder; die Backzähne bis zum m_2 inkl. stehen in gerader Linie und nur der m_3 ist etwas eingerückt. Das Gaumendach ist im Querschnitt gleichmässig gewolbt.

"Der weibliche Schädel hat sehr kurzes Rostrum."

This form was referred to by Herr Schwarz in the Ann. Mag. Nat. Hist., (l. c.) in his paper on CERCOCEBUS; but from lack of material to enable him to decide upon its proper relationship to C.

ALBIGENA he left it as probably a subspecies, but without a name. In the Berlin Museum he found additional skins and skulls, which proved that the form was entitled to a subspecific rank. While the skull, according to Herr Schwarz's description given above, does not present any very strongly marked distinctive characters, yet the differences mentioned, together with the paler coloration of the pelage would seem to be sufficient for its recognition as a subspecies.

CERCOCEBUS ATERRIMUS (Oudemans).

Cercopithecus aterrimus Oudem., Zool. Gart., XXI, 1890, p. 267.

Cercocebus aterrimus Sclat., Proc. Zool. Soc. Lond., 1893, p. 256, (note); 1903, p. 191; Jent., Proc. Zool. Soc. Lond., 1895, p. 338; Delmé-Rad., Proc. Zool. Soc. Lond., 1905, p. 187; Forbes, Handb. Primates, II, 1894, p. 40; Pocock, Ann. Mag. Nat. Hist., XVIII, 7th Ser., 1906, p. 283; Schwarz, Ann. Mag. Nat. Hist., 1910, 8th Ser., p. 530.

Cercocebus congicus Sclat., Proc. Zool. Soc. Lond., 1899, p. 827, fig.; Pocock, Ann. Mag. Nat. Hist., 1906, 7th Ser., p. 285; Schwarz, Ann. Mag. Nat. Hist., 1910, 8th Ser., p. 527.

Cercocebus albigena rothschildi Lydekk., Novit. Zool., VII, 1900, p. 596; VIII, 1901, pl. I, fig. 2; Pocock, Ann. Mag. Nat. Hist., 1906, 7th Ser., p. 284; Schwarz, Ann. Mag. Nat. Hist., 1910, 8th Ser., pp. 528, 530.

Cercocebus hamlyni Pocock, Ann. Mag. Nat. Hist., 1906, 7th Ser., p. 208, pl. VII; Schwarz, Ann. Mag. Nat. Hist., 1910, 8th Ser., pp. 527, 530.

BLACK MANGABEY.

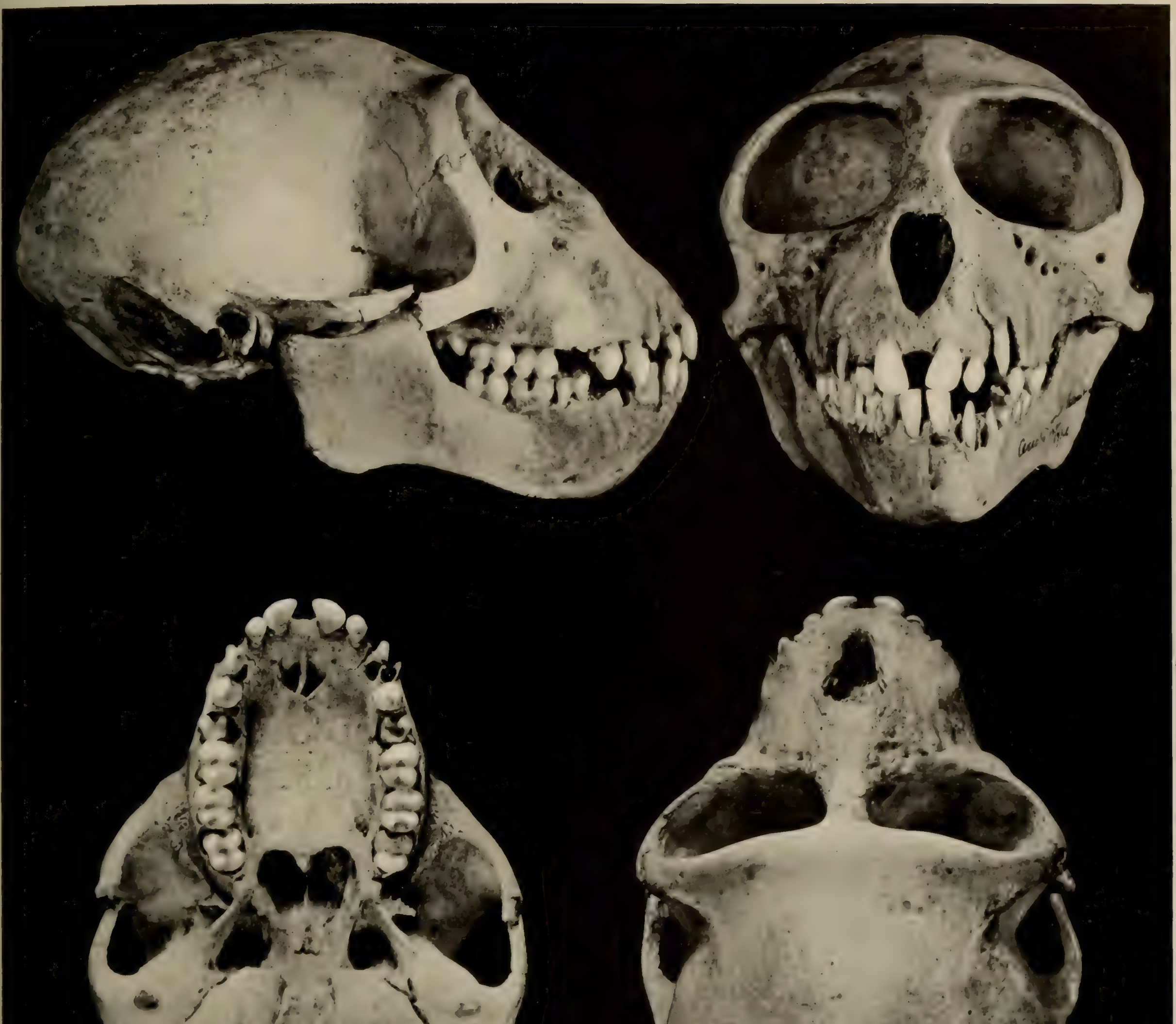
Type locality. Stanley Falls, River Congo. Type in Leyden Museum.

Geogr. Distr. Basin of Central Congo.

Genl. Char. Crest, vertical and pointed, placed on center of crown; no mantle; whiskers long; no brow fringe.

Color. Whiskers, point of shoulders, chest, and inner side of arms above elbows brownish black; throat grayish; rest of pelage, head, body, limbs, hands, feet, and tail black. A young individual. Ex type Leyden Museum.

The type of this species is only about half grown and died in the Zoological Gardens at The Hague in 1890, and was stated to have come from Stanley Falls, Congo. It has not attained altogether the full colored pelage of the adult, and the whiskers are brownish black instead of grayish brown, and those in the adult are long and hide the



CERCOCEBUS ATERRIMUS.

Tring Mus. Coll. Nat. Size.

ears. This species often presents, in various degrees, different stages of albinism, and certain individuals thus lacking in color have been described as distinct species, and have added considerably to the synonymy. I have seen all these so called forms, and some others differing slightly which happily had escaped baptism. The first of these albinos was the *C. congicus* of Sclater (l. c.). The type of this form was living in the Zoological Gardens of Antwerp, presented in 1899 by M. F. Fuchs, the then Governor of the Congo Free State. It was a female and was conspicuous for the prominent crest arising from the top of the head and the long hair on the cheeks. It resembles somewhat in the coloring of the head *C. hamlyni,* but the body is all black. This specimen died and is now in the Museum of the Royal Zoological Society in Antwerp. On a recent visit to the Antwerp Gardens I saw another example, the third, as I was informed by M. l'Hoest, the Director, that they had received. It was a male and about half grown, and differs somewhat from the type, in having the chest black, not white; the flesh colored face and ears were much blotched with blackish brown, and the flesh colored hands, and general appearance of the animal, strongly suggested albinistic coloration. It is more white than black, and may be described as follows: General color white; top of head and pointed crest, chest, and abdomen black; inner side of forearm and back blackish; rest of body and tail white; face, ears, hands and feet flesh color, the first two blotched with brownish black. Crest standing upright; whiskers very large partly covering the ears, and standing outward from the head.

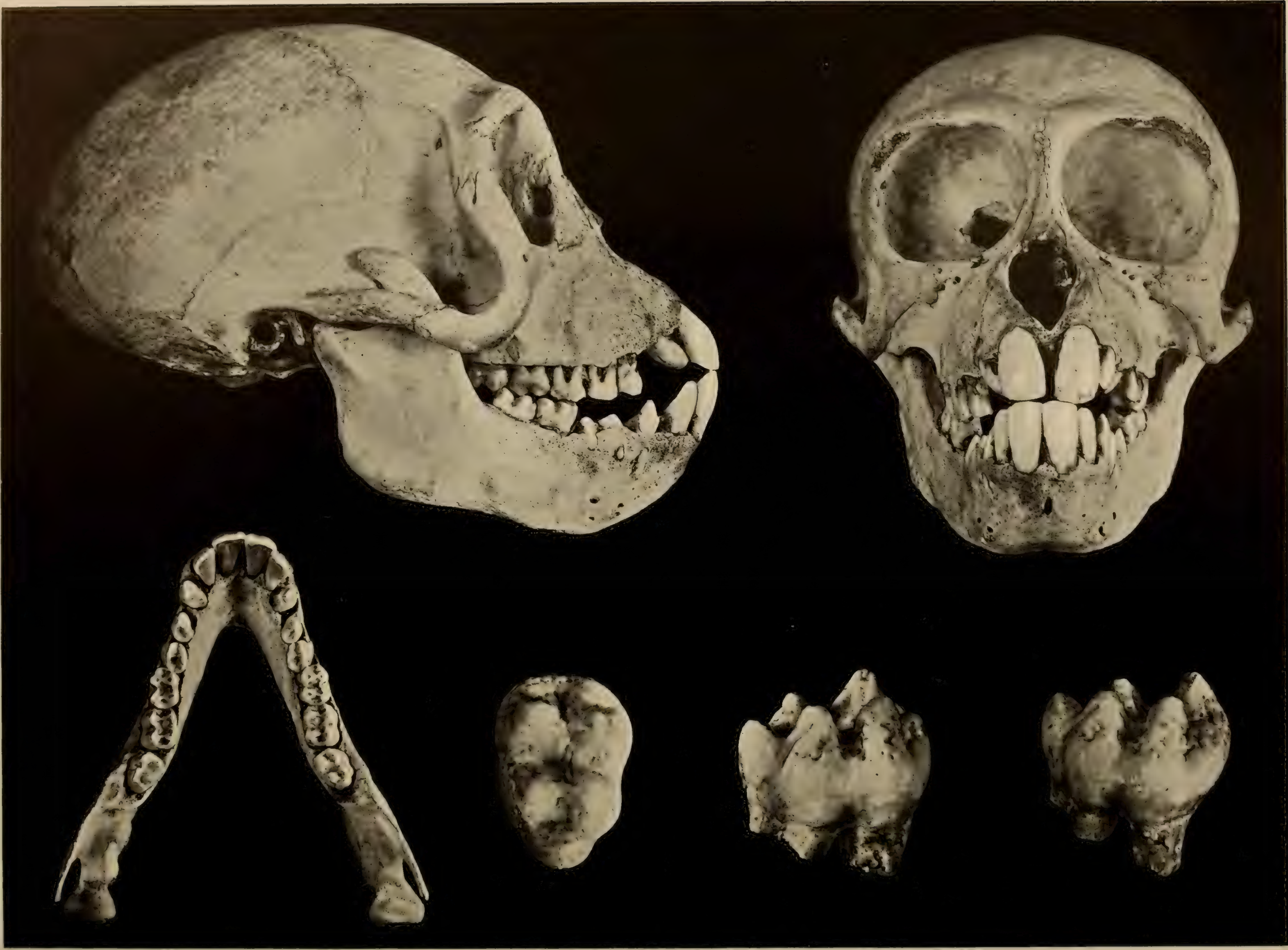
The individual representing the type of *C. hamlyni* Pocock (l. c.) is living (1909) in the Gardens of the Zoological Society of London, and is a female only partially white. It is stated to have come from the "Upper Congo," very likely from Stanley Falls or its vicinity. The following description and measurements were taken from this individual.

Color. Face pale flesh color spotted with brown; upper eyelids white and eyelashes white. Iris olive brown; brow ridge white with few spots; ears flesh color slightly spotted. Top of head black, the hairs long about the center forming a pointed crest; in front and on sides of the black crown is a narrow grayish white band; cheeks and behind ears also grayish white; hair on cheeks long partly covering ears; behind the ears a tuft of white hairs; nape, and dorsal region to lower back, brown; rump and sides of body grayish white; patch on breast ashy gray; throat and rest of under parts whitish; tail grayish white; outer side of arm to elbow grayish white tinged with brown;

forearm iron gray; legs on outer and inner side, and feet grayish white; hands yellowish gray; palms and soles of feet flesh color.

Measurements. Total length about 900; tail, 500.

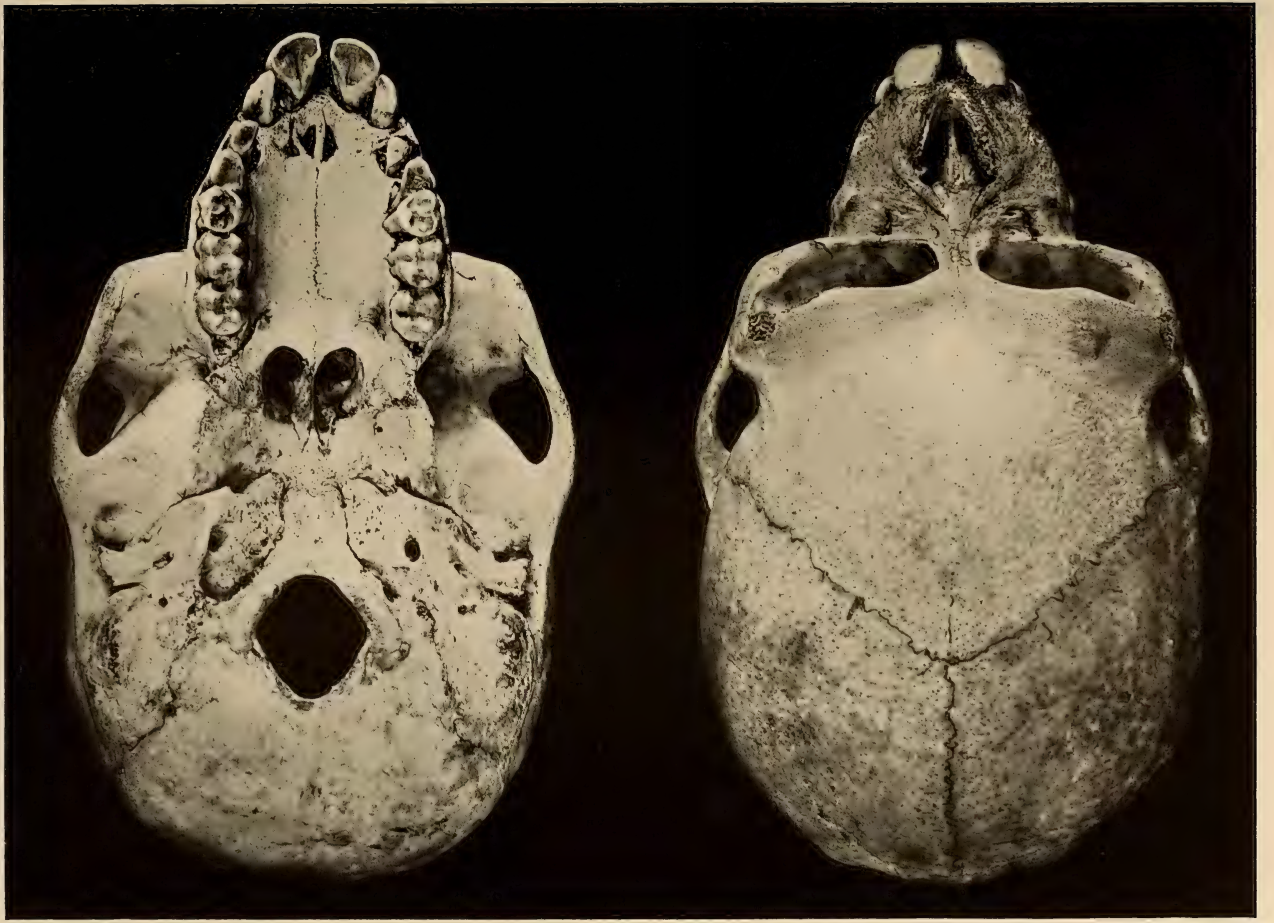
The third of these described forms, *C. a. rothschildi* (l. c.) is also an inmate of the London Zoological Gardens. The locality from which it came is not known, and, as is the case of all these described animals, it is young. This example is not an albino, as the general color of the body and limbs is a uniform black with a slaty tinge on the whiskers, and black eyelids. This appears to be only another phase of coloring differing slightly from the typical style which members of this species exhibit. So far as I am aware no two individuals, having a more or less strong tendency to albinism, have agreed in the distribution of their markings, or in the amount of white or black exhibited, and it is evident that the coloring of their pelage or the lack of it, is purely an individual trait. *C. a. rothschildi* however, is nearer in its coloring to typical C. ATERRIMUS than any of the styles that have been given a separate name.



A.
M3. Crown.
Four Times Nat. Size.

B.
M3. Ext. Post. Oblique.
Four Times Nat. Size.

C.
M3. Ext. Ant. Oblique.
Four Times Nat. Size.



RHINOSTIGMA HAMLYNI.

No. ———? Tring Mus. Coll. Nat. Size.

GENUS VII. *RHINOSTIGMA. OWL-FACED GUENON.

$$\text{I. } \frac{2-2}{2-2}; \quad \text{C. } \frac{1-1}{1-1}; \quad \text{P. } \frac{2-2}{2-2}; \quad \text{M. } \frac{3-3}{3-3} = 32.$$

White line from forehead over nose and lip to mouth. Shape of face elongate ovate, similar to that of the Barn Owl. The last lower molar, with a posterior fifth cusp. Facial line of skull hollowed; premaxillaries protuberant; zygomatic arch slightly above alveolar border of molars.

RHINOSTIGMA HAMLYNI (Pocock).

Cercopithecus hamlyni Pocock, Ann. Mag. Nat. Hist., XX, 7th Ser., 1907, p. 521; *Id.* Proc. Zool. Soc. Lond., 1908, p. 160, pl. X, fig. 3.

HAMLYN'S OR OWL-FACED GUENON.

Type locality. Ituri forests, Congo State, Africa. Type living in the Gardens of the Zoological Society of London, (1909).

Color. A white stripe from forehead down nose and across upper lip to mouth; a pale yellowish superciliary stripe tinged with gray; whiskers long extending to ears bushy, and with top of head and entire upper parts black speckled with yellow; thighs gray; arms, legs and entire under parts black; tail very long, gray, hairs being black tipped with silvery white; hands and feet black; face lead color; ears yellow. Ex type living in Gardens of the London Zoological Society.

Measurements. Skull: total length, occiput to base of incisors, 105; occipito-nasal length, 92; intertemporal width, 50; Hensel, 64; zygomatic width, 68; median length of nasals, 16; palatal length, 37; length of upper molar series, 28; length of mandible, 68; length of lower molar series, 31. Incisors very large in both jaws. Ex type Tring Museum.

I am indebted to the Hon. Walter Rothschild, and Dr. Hartert who very kindly forwarded the type skull to me for examination from the former's Museum, at Tring, England.

In size this monkey is about equal to C. ALBIGULARIS. It is a remarkable species both for the long stripe down the nose and lip, as well as for the peculiar shape of the face, which is broad at the forehead and narrowing down to the chin, like that of the barn owl, the

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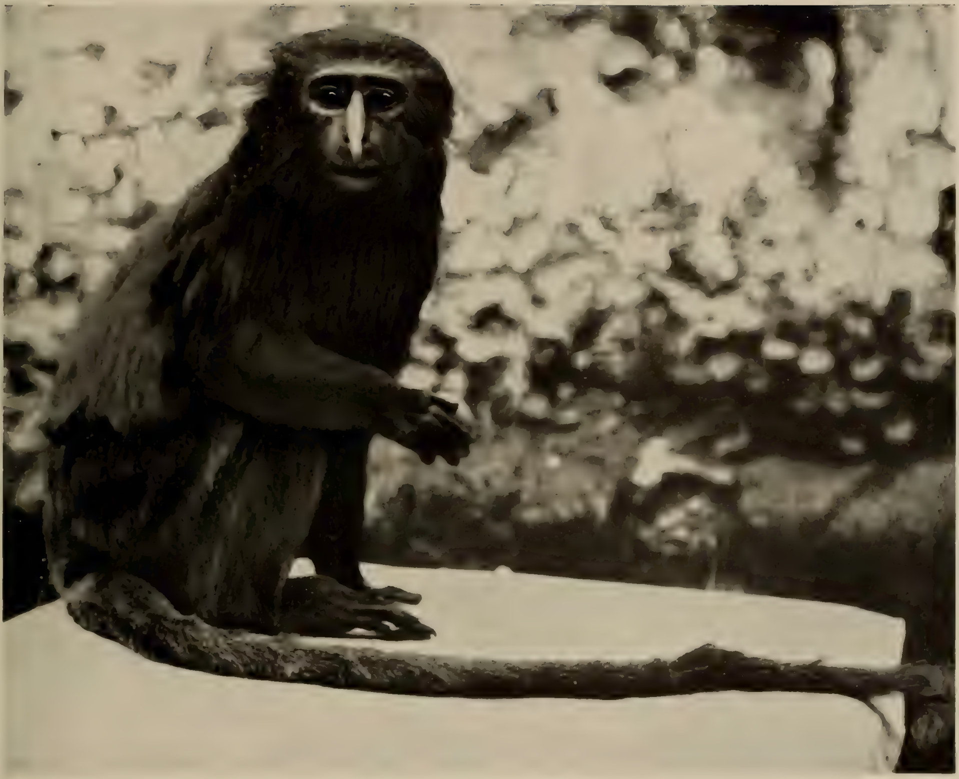
**ρινοσ*, nose, and *ςτιγμα*, a mark.

heavy whiskers fringing it in on each side. The animal has changed in appearance since it was first received, and it cannot be said that it has yet fully acquired its permanent dress, and it seems, that at all events, there is one species of Guenon-like Monkey whose young does not altogether resemble the adult. It is a handsome species, and its peculiar face markings will always cause it to be conspicuous. I saw a second example in the Gardens of the Royal Zoological Society at Antwerp. It was smaller than the one in London, but resembled it closely in color and markings. The exact habitat of the species is not known. Since the above description was taken, the type has died in the Zoological Gardens, in Regent's Park, London. The skull shows it was a young animal, with the molar series not fully developed. The last lower molar on each side was not fully through the gum, but both have a posterior fifth cusp. This excludes the species from the genus LASIOPYGA, while its coloring and peculiar face marking prohibit its reception in CERCOCEBUS, but it seems to occupy an intermediate position as a link between the species of these genera. A new genus, RHINOSTIGMA, has therefore been created for it.



RHINOSTIGMA HAMLYNI.

GENUS VIII. LASIOPYGA. THE GUENONS.

$$I.\ \frac{2-2}{2-2};\quad C.\ \frac{1-1}{1-1};\quad P.\ \frac{2-2}{2-2};\quad M.\ \frac{3-3}{3-3}=32.$$

***LASIOPYGA** Illig., Prodr. Syst. Mamm. et Avium, 1811, p. 68. Type *Simia nictitans* Linnæus.

Cebus Rafin., Analyse de la Nature, 1815, p. 53, (nec Erxl.).

Monichus Oken, Lehrb. Naturg., 3te Theil, Zool., 2te Abeth., 1816, pp. XI, 1208-1211.

Æthiops Martin, Gen. Introd. Nat. Hist. Mammif. Anim., 1841, p. 506.

Petaurista Reichenb., Vollständ. Naturg. Affen, 1862, p. 105, pl. XVIII, figs. 251-261, (nec Link, 1795, Glires; nec Desmarest, 1820, Marsupialia).

Diademia Reichenb., Vollständ. Naturg. Affen, 1862, p. 109, pls. XVIII, XIX, figs. 262-270, (nec Schumacher, 1817, Crustacea).

Mona Reichenb., Vollständ. Naturg. Affen, 1862, p. 109, pls. XIX, XX, figs. 271-282.

Chlorocebus Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 24.

Cynocebus Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 27.

Diana Trouess., Rev. Mag. Zool., VI, 3me Sér., 1878, p. 124, (nec Risso, Pisces, 1826).

Rhinostictus Trouess., Cat. Mamm. Viv. et Foss., I, 1897, p. 17.

Otopithecus Trouess., Cat. Mamm. Viv. et Foss., I, 1897, p. 20.

Pogonocebus Trouess., Cat. Mamm. Viv. et Foss., Suppl., Pt. I, 1904, p. 14.

Body slender; legs and tail long; head round, face short; cheek pouches large; nose moderate, nostrils approximate; whiskers and beard usually present; callosities moderate; hands elongate, fingers webbed at base, thumb small. Skull flat, superciliary ridge much less prominent than in the species of PITHECUS; orbits approximate; posterior lower molars have only four cusps, a transverse ridge uniting the two anterior together, and another the two posterior. Facial line straight, about 58°; premaxillaries on same line as rest of face; zygomatic arch high above alveolar border of molars.

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*Lasiopyga had two species of different genera *Simia* NEMÆUS Linn., and *Simia* NICTITANS Linn. In 1812, a year after Illiger proposed it, E. Geoffroy took NEMÆUS as the type of his genus PYGATHRIX, thus antedating *Presbytis* Escholtz, by nine years, and leaving NICTITANS as the type of LASIOPYGA.

The Guenons, as the members of the genus LASIOPYGA are called, from their habit of making grimaces and showing their teeth, are all dwellers on the African Continent. It is the largest genus of the Primates, and its members are remarkable for the beauty of their coats, some species exhibiting even a brilliant coloring, with at times gay hues brought together in striking contrast. The Guenons are arboreal, inhabiting the vast African forests, and are rarely seen upon the ground, and then only when they may have penetrated a district where trees are not over plentiful, but it is not often they go any distance from the forests. They have a slender, muscular body, and are very rapid in all their actions, incessantly in motion, and pass from tree to tree with wonderful rapidity. When feeding, as a rule, they utter few sounds, and when trying to conceal themselves among the foliage will remain quiescent for a considerable length of time. But like many of their race they are very inquisitive, and desire to examine any strange or unusual object they may meet with. They feed chiefly upon fruits, but various kinds of leaves are eaten by them, and doubtless, if they were fortunate enough to find a bird's nest with eggs they would not pass it by, nor would the hapless fledglings be permitted to go unscathed. Wild honey, which is often hidden in the hollow of some ancient monarch of the forest, would also be appreciated when found. They fill their cheek pouches, and in them carry away all food not eaten at the time, and visit the grain fields of the natives which may be in the vicinity of their forest home, and do much damage, for like all monkeys they destroy far more than they consume. When young they are amusing pets, but as they grow old they are not to be trusted, which is a trait of all the Primates, age usually bringing a sulky, fierce temper with a morose disposition, that causes their possessors to seek solitude rather than the companionship of their kind. About eighty species and races of LASIOPYGA are at present recognized, but doubtless many more unknown forms remain to be discovered in the vast hidden recesses of the great woods with which so large a part of Africa is covered.

Bates referring to the Guenons (l. c.) observed by him in Southern Cameroon, states: "The genus *Cercopithecus,* (LASIOPYGA), comprises all the common species of monkeys of this country. Shooting these monkeys affords much sport to white men who get into the forest, and is the principal occupation of native hunters. They are not easily approached, for they have keen sight and hearing and are shy. They go about in small companies of a dozen or less, with one old male for leader. Often an old male is found alone, probably a defeated candidate for the place of leader, who has gone off by himself. The leader may often be heard calling in a loud, gruff, barking tone, to keep the company together. Except for the occasional call of the leader, the company feeds silently, and the only sound that betrays the presence of monkeys is the rustling of boughs as they pluck fruits, or jump from branch to branch. Only when they discover the hunter and become frightened, do they utter a little cackling sort of chatter, then they scurry away, and if they are in thick foliage, they hide and remain hidden securely as long as the hunter has patience to wait for them to come out. But if they are in an open tree they may be shot while running if a man is quick enough. If the leader has passed ahead, sometimes the others will venture out in plain sight in order to follow him.

"These monkeys very rarely come to the ground; I myself have never seen one on or even near the ground, except when wounded. They can pass from the branches of one tree to those of another, not touching it, by jumping; they jump upon and grasp the swaying outmost twigs, which bend far down with the weight and then spring up. The monkey merely holds on as the branch sways down, but with the rebound he scrambles along to the larger branches. Monkeys can cross any but the largest rivers in this way, on the nearly meeting tree tops.

"These monkeys sleep in the trees, but do not make rude beds of the branches as does the Chimpanzee. I have asked many natives how monkeys manage to keep from falling while asleep, and the answers are various. But there seems a probability in the account, that they sleep sitting, and holding on to the branches, or to each other.

"The habits of the three commonest kinds of *Cercopithecus*, (LASIOPYGA), are very similar, and what is said above applies to all of them. The 'osok' (*C.* CEPHUS) seems to be the most nimble; and the white nosed 'avemba' (*C.* NICTITANS) the least so; the latter kind is rather oftener killed than the others. Different kinds are often together in the same company. The calls of the three kinds, the two mentioned and the 'esuma' *(*C.* ERXLEBENI) are very much alike, but one can learn to distinguish them."

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*L. GRAYI Fraser.

LITERATURE OF THE SPECIES AND SUBSPECIES.

1758. *Linnæus, Systema Naturæ.*
Two species are here recorded which have been referred to the genus Lasiopyga: *Simia* diana and *S. æthiops.* The first is the well known Monkey, Lasiopyga diana from Liberia, the other, however, is not so easily determined. De Winton (l. c.) considers it to be the species afterwards called by Desmarest (l. c.) *C.* griseoviridis from the region of the Upper Nile, Abyssinia, Sennaar and Kordofan, but Linnæus' description, which was evidently taken from Hasselquist's, for it is doubtful if he ever saw a specimen, presents certain difficulties that make it more than probable some other animal than the one from the White Nile was intended. The difficulty is met with in the sentence "Cauda tecta, subtus ferruginea." Now the tail of the White Nile species is speckled grayish above, and white beneath, and this fact would seem at once to compel us to believe that *æthiops* Linn., is not the same. The Linnæan species may possibly be L. ascanius which has a red tail above and below except at the base, or L. cephus of which in the 12th edition he makes a variety. That it belongs to one of the *Petaurista,* or so-called *Æthiops* groups is most likely, but its determination is not easy of accomplishment, and all that can be said with any degree of certainty is, that, while in some degree it resembles C. griseoviridis Desm., it is not that species, nor can it be referred to any known species, and must therefore take a place among the undeterminable forms.

1766. *Linnæus, Systema Naturæ.*
In this the 12th edition of Linnæus' work under *Simia,* four species, now placed in Lasiopyga, are given, but among them, *æthiops,* of the 1758 edition, *as a species* is not found. They are S. diana; (*S.*) *sabæa* undeterminable; (*S.*) cephus; and (*S.*) nictitans first described. Under (*S.*) cephus var. B, is (*S.*) *æthiops,* but in the diagnosis no mention is made of the color of the tail, simply *caudata imberbis,* showing it was a long tailed monkey. Evidently Linnæus was not certain of the distinctness of his *S. æthiops,* and so in his edition reduced it to a variety of a reddish tailed species.

1775-92. *Schreber, Die Säugthiere in Abbildungen nach der Natur mit Beschreibungen.*
The following species of Lasiopyga are given in this work

under the genus *Simia:* (*S.*) DIANA; (*S.*) MONA; "Die mone" first described; (*S.*) *sabœa* Linn., undeterminable; (*S.*) CEPHUS; (*S.*) NICTITANS; "Der Weismäulige Affe"; L. PETAURISTA on plate XIX b first described; and (*S.*) ÆTHIOPS (nec Linn.), = CERCOCEBUS ÆTHIOPS first described. Palatinaffe ou Roloway, L. ROLOWAY first described.

1777. *Erxleben, Systema Regni Animalis.*
The genus *Cercopithecus,* (LASIOPYGA), is here employed, but includes species of different genera. The species of LASIOPYGA as now recognized are: L. DIANA; L. MONA; *L. sabœa* Linn., undeterminable; L. NICTITANS; L. PETAURISTA; and L. ROLOWAY. *C.* TALAPOIN is a MIOPITHECUS and *C. æthiops* possibly = CERCOCEBUS TORQUATUS Kerr.

1786. *Scopoli, Deliciæ Floræ et Faunæ Insubricæ.*
LASIOPYGA CYNOSURA first described as *Simia cynosura.*

1788. *Gmelin, Systema Naturæ.*
The same species of LASIOPYGA given by Linnæus are repeated in this list.

1797. *Audebert, Histoire Naturelle des Singes et des Makis.*
The following species of LASIOPYGA are here recorded and figured under the genus *Simia:* (*S.*) NICTITANS; (*S.*) *sabœa* Linn., undeterminable; (S.) DIANA; (S.) MONA; (S.) CEPHUS; (S.) ASCANIUS; (S.) PETAURISTA.

1800. *Shaw, General Zoology. Mammalia.*
All the monkeys are placed in the genus *Simia.* Those that belong to the genus LASIOPYGA are (*S.*) *diana* = *L.* ROLOWAY; (*S.*) *sabœa* Linn., undeterminable; (*S.*) CEPHUS; (*S.*) NICTITANS; (*S.*) PETAURISTA (Schreb.); and (*S.*) *mona.*

1812. *E. Geoffroy, in Annales du Muséum d'Histoire Naturelle, Paris.*
The genus LASIOPYGA, in this list, contains species belonging to different genera, those, however, properly belonging to it are: L. CEPHUS; L. MONA; L. NICTITANS; L. PETAURISTA (Schreb.); L. DIANA; and L. CYNOSURA.

1820. *Kuhl, Beiträge zur Zoologie.*
The following species of LASIOPYGA, with also others belonging to different genera, are here recorded. The various forms are *L. diana* = L. ROLOWAY (Erxl.); L. NICTITANS; L. CEPHUS; L. MONA; L. PETAURISTA (Schreb.); L. CYNOSURA; and *L. sabœa* (Linn.), undeterminable.

1820. *Desmarest, Mammalogie ou Description des Espèces de Mammifères.*
Like previous Authors, species of different genera are in this work included in the genus *Cercopithecus,* (LASIOPYGA). Those properly belonging to it are: L. CEPHUS; L. MONA; L. NICTITANS; *L. petaurista* (nec Schreb.), = L. FANTIENSIS Matschie; *L. diana* = L. ROLOWAY (Erxl.); L. CYNOSURA; *L. sabæa* (Linn.), undeterminable; L. GRISEOVIRIDIS first described. In the Supplement is L. PYGERYTHRA, F. Cuvier's figure cited.

1820. *F. Cuvier, Histoire Naturelle des Mammifères.*
Lasiopyga petaurista Audeb., (nec Schreb.), called *L'Ascaigne,* and on the plate figured as L'Ascaigne femelle = L. FANTIENSIS (Matschie).

1821. *F. Cuvier, in Dictionnaire des Sciences Naturelles.*
LASIOPYGA GRISEOVIRIDIS (Desm.), renamed *Simia subviridis.*

1821. *F. Cuvier, Histoire Naturelle des Mammifères.*
LASIOPYGA PYGERYTHRA first described.

1824. *F. Cuvier, in Histoire Naturelle des Mammifères. Tableau Général et Méthodique.*
LASIOPYGA GRISEOVIRIDIS (Desm.), renamed CERCOPITHECUS GRISEUS.

1825. *Desmoulins, in Dictionnaire Classique des Sciences Naturelles.*
LASIOPYGA PYGERYTHRA (F. Cuv.), redescribed as *Cercopithecus pusillus.*

1829. *Fischer, Synopsis Mammalium.*
Under the genus *Simia,* together with many species of other genera, the following species of *Lasiopyga* are given in this work: (*S.*) MONA; (*S.*) *petaurista* (nec Schreb.), = L. FANTIENSIS Matsch.; (*S.*) NICTITANS; (*S.*) DIANA; (*S.*) ROLOWAY; (*S.*) LEUCAMPYX first described; (*S.*) CEPHUS; (*S.*) *sabæa* Linn., undeterminable; (*S.*) *subviridis* (F. Cuv.), = L. GRISEOVIRIDIS Desm.; and (*S.*) PYGERYTHRA.

1829. *G. Cuvier, Règne Animal.*
Among the species of *Simia* as employed in this work are the following of LASIOPYGA: (*S.*) *sabæa* Linn., undeterminable; (*S.*) CYNOSURA; (*S.*) *erythropyga* G. Cuv., = L. PYGERYTHRA F. Cuv.; (*S.*) MONA; (*S.*) *diana* = L. ROLOWAY; (*S.*) CEPHUS; (*S.*) *petaurista* (nec Schreb.), = L. FANTIENSIS Matschie; and (*S.*) NICTITANS.

1830. *Fischer, Addenda, Emendanda et Index ad Synopsis Mammalium.*
In the list given in the Addenda for the volume dated 1829, *Simia erythropyga* G. Cuv., = LASIOPYGA PYGERYTHRA (F. Cuv.), is added.

1831. *Sykes, in Proceedings of the Zoological Society of London.*
LASIOPYGA ALBIGULARIS first described as *Semnopithecus* (!) *albogularis.*

1834. *I. Geoffroy St. Hilaire, in Bélanger' Voyage aux Indes-Orientales.*
LASIOPYGA LEUCAMPYX Fisch., ♀, redescribed as *Cercopithecus diadematus.*

1838. *Bennett, in Proceedings of the Zoological Society of London.*
LASIOPYGA CYNOSURA Scopoli, redescribed as *Cercopithecus tephrops;* and L. POGONIAS described for the first time as *Cercopithecus pogonias.*

1838. *Waterhouse, in Proceedings of the Zoological Society of London.*
LASIOPYGA ERYTHROTIS first described.

1838. *Waterhouse, in Proceedings of the Zoological Society of London.*
L. MARTINI; L. CAMPBELLI described for the first time; and L. ERYTHROTIS, all under *Cercopithecus.*

1840. *Wagner, Schreber, Die Säugthiere in Abbildungen nach der Natur mit Beschreibungen. Supplementband.*
In this work the species of LASIOPYGA, (under *Cercopithecus*), comprises fourteen species and one variety, or as would be called at the present time, one subspecies. They are *L. sabœa* (Linn.), undeterminable; L. GRISEOVIRIDIS (Desm.); L. PYGERYTHRA F. Cuv.; L. CYNOSURA (Scop.); L. PETAURISTA (Schreb.); with var. A. L. ASCANIUS (Schreb.); L. NICTITANS (Linn.); L. POGONIAS (Bennett); L. DIANA (Linn.); L. LEUCAMPYX (Fisch.); (*C.*) *fuliginosus* (Geoff.), not a LASIOPYGA but a CERCOCEBUS; L. ÆTHIOPS (Linn.), undeterminable; L. CEPHUS (Linn.); L. MONA (Schreb.); (*C.*) *rubra* (Linn.), = E. PATAS? (Schreb.), not a LASIOPYGA, and in this Review is placed in the genus ERYTHROCEBUS. *Simia æthiops* Linn., undeterminable, is placed as a synonym of (*C.*) *fuliginosus* E. Geoff., = CERCOCEBUS ÆTHIOPS (Schreb.), and with *Cercopithecus æthiopicus* F. Cuv., and "Mangabey à collier" of Buffon, and other Authors, as synonyms. This animal, how-

ever, is a Cercocebus, and shows how early in the Literature this species of Linnæus had been the cause of much diversity of opinion.

1840. *R. P. Lesson, Species Mammifères Bimanes et Quadrumanes.* Of the genus Lasiopyga the following species are recorded in this work, under *Cercopithecus:* (*C.*) mona; (*C.*) *diana* = *L. roloway; (*C.*) *diadematus* = L. leucampyx; (*C.*) roloway; (*C.*) nictitans; (*C.*) *petaurista* = L. fantiensis (Matschie); (*C.*) cephus; (*C.*) *sabæa* undeterminable; (*C.*) *griseus* = L. griseoviridis; (*C.*) cynosura; (*C.*) *tephrops* Bennett, = L. cynosura (Scopoli); and (*C.*) pygerythra.

1841. *Ogilby, in Proceedings of the Zoological Society of London.* Lasiopyga tantalus first described as *Cercopithecus tantalus.*

1841. *I. Geoffroy, in Archives du Muséum d'Histoire Naturelle, Paris.* Lasiopyga albigularis Sykes redescribed as *Cercopithecus monoides;* and L. rufoviridis, described for the first time as *Cercopithecus rufoviridis.*

1842. *J. E. Gray, in Proceedings of the Zoological Society of London.* Lasiopyga burnetti first described as *Cercopithecus burnetti.*

1842. *I. Geoffroy St. Hilaire, in Comptes Rendus de l'Académie des Sciences.* Lasiopyga labiata described for the first time as *Cercopithecus labiatus.*

1843. *I. Geoffroy St. Hilaire, in Dictionnaire d'Histoire Naturelle.* Lasiopyga pygerythra F. Cuv., renamed *Cercopithecus lallandi.*

1844. *Sundevall, Oversigt. Kongliga Svenska Vetenskaps-Akademie Förh.* Lasiopyga labiata I. Geoff., redescribed as *Cercopithecus samango.*

1844. *Blyth, in Journal of the Asiatic Society of Bengal.* Lasiopyga tantalus renamed *Cercopithecus chrysurus.*

1845. *J. E. Gray, in Annals and Magazine of Natural History.* Lasiopyga ascanius Audeb., renamed *Cercopithecus melanogenys.*

1845. *I. Geoffroy St. Hilaire, in Dictionnaire d'Histoire Naturelle.* Lasiopyga martini redescribed as *Cercopithecus temmincki.*

1848. *J. E. Gray, in Proceedings of the Zoological Society of London.* Lasiopyga pluto first described as *Cercopithecus pluto.*

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* "interne des cuisses jaune."

1849. *J. E. Gray, in Proceedings of the Zoological Society of London.*
LASIOPYGA MARTINI Waterh., renamed *Cercopithecus ludio.*

1850. *I. Geoffroy St. Hilaire, in Comptes Rendus de l'Académie des Sciences.*
Lasiopyga sabæa (Linn.), undeterminable; L. WERNERI first described as *Cercopithecus werneri;* and L. GRISEOVIRIDIS Desm., called *Cercopithecus sabæus.*

1850. *Fraser, Catalogue of the Knowsley Collection.*
LASIOPYGUS GRAYI first described as *Cercopithecus grayi.*

1851. *I. Geoffroy St. Hilaire, Catalogue des Primates.*
A list of the species of LASIOPYGA (under *Cercopithecus*), contained in the Paris Museum, with a history of the specimens so far as known is here given. They are divided into two groups, 1er, *"Espèces à museau un peu plus court, à formes plus sveltes,"* and, 2me, *"Espèces à museau un peu plus long, à formes moins sveltes."* The first has three sections: A. *"Espèces à nez velu et blanc"* with two species, L. NICTITANS, and (*C.*) *petaurista* (nec Schreb.), = L. FANTIENSIS Matschie. B. *"Espèces n'ayant ni le nez blanc ni une bande sourcilière blanche"* has four species: L. CEPHUS; (*C.*) *monoides* = L. ALBIGULARIS; L. LABIATA; and L. MONA. C. *"Espèces ayant une bande frontale blanche"* contains two species: L. DIANA, and L. LEUCAMPYX. The second group has two sections: A. *"Espèces à pelage vert ou teinte de vert"* has seven species: (*C.*) *lallandi* = L. PYGERYTHRA; L. PYGERYTHRA; L. CYNOSURA; (*C.*) *sabæus* (nec Linn.), = L. GRISEOVIRIDIS (Desm.); L. RUFOVIRIDIS; (C.) CALLITRICHUS = *L. sabæa* (Auct. nec Linn.); L. WERNERI. B. *"Espèces à pelage d'un roux vif,"* treats of the species that are retained in the genus ERYTHROCEBUS in this work, and will be considered in the review of that group.

1852. *Peters, W. C. H. Naturwissenschaftliche Reise nach Mossambique. Säugethiere.*
Lasiopyga albigularis juv. Sykes, is here renamed *Cercopithecus erythrarchus;* and LASIOPYGA RUFOVIRIDIS I. Geoff., redescribed as *Cercopithecus flavidus. Cercopithecus ochraceous* is a young PAPIO, species not determinable. Skull in Berlin Museum.

1855. *Wagner, Schreber, Die Saugthiere in Abbildungen nach der Natur mit Beschreibungen. Supplementband.*
In the volume for this year, the Author includes thirty-two

species of LASIOPYGA in *Cercopithecus,* and divides the genus into three subgenera: *Miopithecus, Cercopithecus* and *Cercocebus,* all of which now, however, are given generic rank by most writers. *Cercopithecus,* (LASIOPYGA), contains: (*C.*) CYNOSURA; (*C.*) PYGERYTHRA; (*C.*) *lallandi* I. Geoff., = L. PYGERYTHRA (F. Cuv.); (*C.*) GRISEOVIRIDUS; (*C.*) *sabæus* (Linn.), undeterminable; (*C.*) RUFOVIRIDIS; (*C.*) *flavidus* Pet., = L. RUFOVIRIDIS (I. Geoff.); (*C.*) WERNERI Geoff., (*C.*) POGONIAS; (*C.*) *burnetti;* (*C.*) *samango* Sundev., = L. LABIATA (I. Geoff.); (*C.*) LABIATUS; (*C.*) ALBIGULARIS; (*C.*) *erythrarcha* Pet., = L. ALBIGULARIS (Sykes); (*C.*) MONA; (*C.*) CAMPBELLI; (*C.*) *palatinus* Wagn., = L. ROLOWAY (Erxleb.); (*C.*) DIANA; (*C.*) LEUCAMPYX; (*C.*) PLUTO; (*C.*) ERYTHROTIS; (*C.*) CEPHUS; (*C.*) NICTITANS; (*C.*) *melanogenys* Gray, = L. ASCANIUS Audebert; (*C.*) *ludio* Gray, = L. MARTINI (Waterh.); (*C.*) *ruber* (Linn.), = ERYTHROCEBUS PATAS? (Schreb.); (*C.*) PYRRHONOTUS Erhenb., is also an ERYTHROCEBUS; (*C.*) *ochraceus* Peters is a PAPIO; and (*C.*) *fuliginosus* = CERCOCEBUS ÆTHIOPS (Schreb.); (*C.*) *collaris* = C. TORQUATUS (Kerr), and both belong to CERCOCEBUS. (*C.*) *æthiops* (Linn.), is undeterminable.

1856. *Pucheran, in Revue et Magasin de Zoologie.*
LASIOPYGA GRAYI Fraser, renamed *Cercopithecus erxlebeni.*

1860. *Du Chaillu, in Proceedings of the Academy of Natural Sciences of Philadelphia.*
LASIOPYGA NIGRIPES first described as *Cercopithecus nigripes.*

1862. *Reichenbach, Die Vollständigste Naturgeschichte der Affen.*
The species of the genus LASIOPYGA is here divided into four subgenera. A. MIOPITHECUS, and B. CERCOCEBUS, both recognized in the present Review as independent genera. C. *Cercopithecus* with the following species. (*C.*) CEPHUS; (*C.*) *melanogenys* Gray, = L. ASCANIUS (Audeb.); (*C.*) *ludio* Gray, = L. MARTINI (Waterh.); (*C.*) PETAURISTA ex Guinée; (*C.*) *histrio* Reichenb., = L. ASCANIUS (Audebert); (*C.*) ASCANIUS; (*C.*) NICTITANS; (*C.*) ROLOWAY; (*C.*) DIANA; (*C.*) LEUCAMPYX; (*C.*) PLUTO; (*C.*) MONA; (*C.*) CAMPBELLI; (*C.*) POGONIAS; (*C.*) *erxlebeni* Pucher., = L. GRAYI (Fraser); (*C.*) NIGRIPES; (*C.*) BURNETTI; (*C.*) LABIATUS; (*C.*) MARTINI; (*C.*) *erythrarchus* Peters, = L. ALBIGULARIS (Sykes); (*C.*) ERYTHROTIS; (*C.*) ALBIGULARIS; (*C.*) *monoides* I. Geoff., = L. ALBIGULARIS (Sykes); (*C.*) WERNERI; (*C.*) RUFOVIRIDIS;

(*C.*) *lallandi* E. Geoff., = L. PYGERYTHRA (F. Cuv.); (*C.*) *sabæus* (Linn.), undeterminable; (*C.*) CALLITRICHUS; (*C.*) GRISEOVIRIDIS; (*C.*) PYGERYTHRUS; (*C.*) CYNOSURUS; (*C.*) *tephrops* Bennett, = L. CYNOSURA, (Scopoli); (*C.*) *ochraceus* is a PAPIO juv.; (*C.*) *flavidus* Peters, = L. RUFOVIRIDIS (I. Geoff.); and the following species which belong to ERYTHROCEBUS: (*C.*) PATAS; (*C.*) *ruber* Schreb., = (*C.*) PATAS (Schreb.); (*C.*) POLIOPHÆUS; (*C.*) CIRCUMCINCTUS; and (*C.*) PYRRHONOTUS. The fourth subgenus is D. LASIOPYGA, with one species (*C.*) NEMÆUS which belongs to PYGATHRIX.

Like the Author's treatment of all the genera of the Primates, probably from lack of material on which to form an independent opinion of their relative values, all described species of different Authors were accepted as valid. Figures of the various forms are given in a separate volume, but so badly colored that they are much more likely to mislead than to assist the investigator. The work is only a compilation from other publications, the Author apparently having but little personal knowledge of the majority of the species he includes in his book.

1870. *J. E. Gray, Catalogue of Monkeys, Lemurs and Fruit-eating Bats, in the Collection of the British Museum.*

In this Catalogue a list of the species in the British Museum of the genus LASIOPYGA, (under *Cercopithecus*), as recognized by the Author, is given as follows, divided into two subgenera *Cercopithecus* and *Chlorocebus*. The first has (*C.*) CEPHUS; (*C.*) *petaurista* (nec Schreb.), = L. FANTIENSIS (Matschie); (*C.*) *melanogenys* Gray, = L. ASCANIUS (Audebert); (*C.*) MARTINI; (*C.*) NICTITANS; (*C.*) *ludio* Gray, = L. MARTINI (Waterh.); (*C.*) ERYTHROTIS; (*C.*) DIANA; (*C.*) *diana ignita* Gray, = L. DIANA (Linn.); (*C.*) *leucampyx* (nec Fisch.), = L. DIANA (Linn.); (*C.*) MONA; (*C.*) POGONIAS; (*C.*) *erxlebeni* Dahlb. et Pucher., = L. GRAYI (Fraser); (*C.*) *erxlebeni* var. *nigripes* = L. NIGRIPES (Du Chaillu); (*C.*) PLUTO; (*C.*) CAMPBELLI; (*C.*) ALBIGULARIS; (*C.*) *samango* Sundev., = L. LABIATA (I. Geoff.). *Chlorocebus* contains (*C.*) PYGERYTHRUS; (*C.*) RUFOVIRIDIS; (*C.*) *sabæus* (nec Linn.), = L. CALLITRICHUS; *C. engythithea* Gray, = L. GRISEOVIRIDIS (Desm.); and *C.* CYNOSURUS. The following species were apparently unknown to the Author: (*C.*) *ochraceus* Peters, a PAPIO; (*C.*) *flavidus* Peters, = L. RUFOVIRIDIS

(Geoff.); (*C.*) *rufoniger* Geoff., wrong citation; (*C.*) WERNERI; (*C.*) *chrysurus* Blyth, = L. TANTALUS Ogilby; and (*C.*) TANTALUS.

1876. *Schlegel, Muséum d'Histoire Naturelle des Pays-Bas, Simiæ.*
A list of the Simiæ in the Leyden Museum, is given in this work with critical remarks on the species described. He groups those of LASIOPYGA, under CERCOPITHECUS, in ten various sections, and recognizes altogether twenty-four species. These are (*C.*) ERYTHROGASTER; (*C.*) NEGLECTUS, described for the first time; (*C.*) ERYTHROTIS; (*C.*) TALAPOIN, is a MIOPITHECUS; (*C.*) CYNOSURUS; (*C.*) CALLITRICHUS; (*C.*) *sabæus* undeterminable; (*C.*) PYGERYTHRUS; (*C.*) *erythrarchus* Peters, = L. ALBIGULARIS (Sykes); (*C.*) RUFOVIRIDIS; (*C.*) ALBIGULARIS; (*C.*) *samango* Sundev., = L. LABIATA (I. Geoff.); (*C.*) MONA; (*C.*) CAMPBELLI; (*C.*) POGONIAS; (*C.*) LEUCAMPYX; (*C.*) PETAURISTA; (*C.*) ASCANIUS; (*C.*) NICTITANS; (*C.*) *melanogenys* Gray, = L. ASCANIUS (Audeb.); (*C.*) CEPHUS; (*C.*) DIANA; and two species belonging to the genus ERYTHROCEBUS, (*C.*) PATAS; and (*C.*) PYRRHONOTUS.

1886. *Santos, in Jornal de Sciencias Mathematicas Physicæ Naturæ, Lisboa.*
LASIOPYGA ASCANIUS renamed *Cercopithecus picturatus.*

1886. *Jentink, in Notes from the Leyden Museum.*
LASIOPYGA SIGNATA; and L. BUTTIKOFERI first described under *Cercopithecus.*

1887. *Giglioli, in Zoologischer Anzeiger.*
LASIOPYGA BOUTOURLINI first described as *Cercopithecus boutourlini.*

1888. *Jentink, in Notes from the Leyden Museum.*
LASIOPYGA MARTINI redescribed as *Cercopithecus stampflii* juv.

1890. *Meyer, in Notes from the Leyden Museum.*
LASIOPYGA WOLFI first described as *Cercopithecus wolfi.*

1892. *Matschie, in Zoologischer Anzeiger.*
LASIOPYGA SCHMIDTI first described as *Cercopithecus schmidti.*

1892. *P. L. Sclater, in Proceedings of the Zoological Society of London.*
LASIOPYGA STAIRSI first described as *Cercopithecus stairsi.*

1893. *Matschie, in Sitzungsberichte Gesellschaft Naturforschender Freunde.*
Lasiopyga petaurista (Auct. nec Schreber), named *Cercopithecus fantiensis.*

1893. *P. L. Sclater, in Proceedings of the Zoological Society of London.*
A List of the species of LASIOPYGA, (placed in *Cercopithecus*), known to the Author thirty-one in number, is here given. They are divided into six sections, A to F, according to color, the possession of a nose spot, ears tufted, or with long beards. The arrangement was a decided improvement on any attempted, and brought together more effectively nearly related forms. The various species accepted as entitled to a distinct rank are: L. PETAURISTA; L. BUTTIKOFERI; L. MARTINI; (*C.*) *ludio* Gray, = L. MARTINI (Waterh.); (*C.*) *melanogenys* Gray, = L. ASCANIUS (Audeb.); L. SCHMIDTI; L. NICTITANS; L. ERYTHROTIS; L. CEPHUS; these belong to Section A, *Rhinosticti.* Section B, *Chloronati,* contains L. CYNOSURA; L. GRISEOVIRIDIS; L. CALLITRICHUS Geoff.; L. PYGERYTHRA; (*C.*) *erythrarchus* Peters, = L. ALBIGULARIS (Sykes). Species of Section C, *Erythronoti,* are in the present Review included in a separate genus ERYTHROCEBUS, but as Dr. Sclater gives them, consists of only two species, (*C.*) PATAS; and (*C.*) PYRRHONOTUS. Section D, *Melanochiri,* includes L. MONA; L. ALBIGULARIS; L. CAMPBELLI; (*C.*) *samango* Sundev., = L. LABIATA (Geoff.); L. MOLONEYI first described; L. STAIRSI; L. ERYTHROGASTER; L. NEGLECTA; and (*C.*) *leucampyx* nec Fisch., = L. PLUTO (Gray). Section E, *Auriculati,* possesses (*C.*) *erxlebeni* Puch., = L. GRAYI Fraser; L. POGONIAS; and L. NIGRIPES. Section F, *Barbati,* has L. DIANA; and L. BRAZZÆ (A. Milne-Edw.). A list of the species known to the Author from the published descriptions only follows: L. BOUTOURLINI; (*C.*) *flavidus* Peters, = L. RUFOVIRIDIS (Geoff.); L. LABIATA; (*C.*) *monoides* I. Geoff., = L. ALBIGULARIS (Sykes); (*C.*) *palatinus* Wagn., = L. ROLOWAY (Schreb.); (*C.*) *picturatus* Santos, = L. ASCANIUS (Audeb.); L. SIGNATA; (*C.*) *stampflii* Jentink, = L. MARTINI (Waterh.); L. WERNERI; and L. WOLFI.

1893. *Matschie, in Sitzungsberichte Gesellschaft Naturforschender Freunde, Berlin.*
LASIOPYGA STUHLMANNI first described as *Cercopithecus stuhlmanni.*

1893. *P. L. Sclater, in Proceedings of the Zoological Society of London.*
LASIOPYGA OPISTHOSTICTA first described as *Cercopithecus opisthostictus.*

1893. *Matschie, in Sitzungsberichte Gesellschaft Naturforschender Freunde, Berlin.*
A paper on Sclater's List of the species of *Cercopithecus* (Lasiopyga), with comment on certain described forms. (*C.*) *flavidus* Peters, is deemed the same as L. rufoviridis (I. Geoff.); L. labiatus (Geoff.); and *L. samango* (Sundev.), are the same; (*C.*) *monoides* Geoff., must be a synonym of L. albigularis (Sykes); (*C.*) *palatinus* Wagn., = L. roloway (Schreb.); (*C.*) *picturatus* Santos, = *L. melanogenys* (Gray), which is a synonym of L. ascanius; L. signatus Jent., and L. martini are distinct; *C. ochraceus* Peters, is a Papio; L. tantalus; and L. werneri are distinct; *L. temmincki* (Ogilby), and L. wolfi (Meyer), are unknown to the Author.
In a previous part of the same volume Herr Matschie gives a few species of Lasiopyga and their synonymy. *L. p. fantiensis* (Matschie), is the L. petaurista (Auct. nec Schreber); L. buttikoferi and L. fantiensis compared; L. ascanius (Linn.), and *L. melanogenys* (Gray), which is the same as L. ascanius (Audeb.), are kept as a distinct species, and *L. ascanius* (Wagn.), Schreb., Säugth. Suppl., 1840, p. 310, made the first synonym. L. schmidti; L. signatus (Jent.); L. martini, with L. nictitans (Linn.), as its first synonym. L. nictitans (Linn.), with *L. nictitans* (Desm.), as the first synonym; L. ludio, ex Pessy country, Liberia, with white nose, ? (Pennant), and *L. nictitans* (Shaw), as the leading synonym. Brief descriptions of the forms mentioned are given.

1896. *E. de Pousargues, in Bulletin du Muséum d'Histoire Naturelle de Paris.*
Lasiopyga albitorquata described for the first time as *Cercopithecus albitorquatus.*

1896. *E. de Pousargues, in Annales des Sciences Naturelles, Zoologie, 8th Series.*
A critical paper on certain species of Lasiopyga, (under *Cercopithecus*), and their relationship and dispersion. Those discussed are L. petaurista, of which L. fantiensis is made a synonym, the great difference in depth of color not being deemed sufficient to render them distinct; L. erythrogaster which is also compared with L. petaurista, (from which it certainly is very different in coloring as its name indicates), and is reluctantly permitted to remain distinct; L. buttikoferi is

considered as "une variété purement locale" of L. PETAURISTA. L. SIGNATA is deemed distinct. L. ASCANIUS with which he unites *L. histrio* (Reich.), *L. melanogenys* Gray, *L. picturata* (Santos), and L. SCHMIDTI (Matschie), with which view, with the exception of the last species, most Mammalogists will agree; L. ERYTHROTIS is accepted as a species, as are also L. NICTITANS, and L. MARTINI, the latter with *L. ludio* (Gray), *L. melanogenys* (Schlegel, nec Gray), and *L. stampflii* (Jent.), as synonyms. L. CEPHUS, and L. POGONIAS are considered distinct; *L. erxlebeni* (Dahlb. et Pucher.), = L. GRAYI (Fraser); L. NIGRIPES Du Chaillu; L. GRAYI Fraser; L. BRAZZÆ, and L. CYNOSURA are accepted, and L. GRISEOVIRIDIS (Desmarest), is called *L. sabæa* Linn., (!) of which *L. engythithea* (Gray), is made a synonym. There are descriptions of the species, and the geographical distribution is discussed. Altogether it is a paper to which much thought has been given and betokens a considerable advance in the treatment of the subject.

1898. *Matschie, in Sitzungsberichte Gesellschaft Naturforschender Freunde.*
LASIOPYGA PREUSSI first described as *Cercopithecus preussi.*

1898. *P. L. Sclater, in Proceedings of the Zoological Society of London.*
LASIOPYGA L'HOESTI first described as *Cercopithecus l'hoesti.*

1900. *O. Thomas, in Proceedings of the Zoological Society of London.*
LASIOPYGA BOUTOURLINI Giglioli, renamed *Cercopithecus omensis.*

1900. *Neumann, in Zoologischer Jahresbericht.*
LASIOPYGA CENTRALIS first described as *Cercopithecus centralis.*

1902. *P. L. Sclater, in Proceedings of the Zoological Society of London.*
LASIOPYGA STUHLMANNI redescribed as *Cercopithecus otoleucus.*

1902. *Neumann, in Proceedings of the Zoological Society of London.*
LASIOPYGA KOLBI, L. MATSCHIE, and L. DJAMDJAMENSIS first described under *Cercopithecus.*

1902. *O. Thomas, in Proceedings of the Zoological Society of London.*
LASIOPYGA FRANCESCÆ first described as *Cercopithecus francescæ.*

1902. *J. Anderson, Zoology of Egyptian Mammals.*
Two species are here given: *C. æthiops* (nec Linn.), = L. GRISEOVIRIDIS (Desm.); and C. PYRRHONOTUS which is an ERYTHROCEBUS.

1902. *Neumann, in Sitzungsberichte Gesellschaft Naturforschender Freunde.*
LASIOPYGA HILGERTI, and *L. ellenbecki* = L. HILGERTI, first described under CERCOPITHECUS.

1904. *Pocock, in Proceedings of the Zoological Society of London.*
LASIOPYGA SCLATERI described for the first time as CERCOPITHECUS SCLATERI.

1905. *Matschie, in Sitzungsberichte Gesellschaft Naturforschender Freunde.*
LASIOPYGA KANDTI first described as *Cercopithecus kandti.*

1905. *Forbes, in Nature.*
LASIOPYGA PREUSSI (Matschie), redescribed as *Cercopithecus crossi.*

1907. *O. Thomas, in Proceedings of the Zoological Society of London.*
LASIOPYGA DENTI first described as *Cercopithecus denti.*

1907. *R. I. Pocock, in Proceedings of the Zoological Society of London.*
This somewhat elaborate paper on the species of LASIOPYGA, is entitled "A Monographic Revision of the Genus *Cercopithecus*," and contains descriptions of nearly all the species described up to the date of its publication. The Author's material for his undertaking was inadequate, consisting of the skins in the Collection of the British Museum, and the skins and living members of the genus in the Menagerie of the Zoological Society in Regent's Park, London. This material, though considerable in number of specimens, gave the Author no personal knowledge of many species in Continental Museums not represented in the British Museum, and thus placed him at a disadvantage. Cranial characters, which are of supreme importance in the discrimination of species were not considered at all, for the reason as he states, that "lack of proper material has prevented me from making use of skull characters," and so at the outset he was deprived of one of the most important methods of determining species.

The Author commences with a not entirely complete List of the genera proposed for the Guenons, and their types, arrived at either *ab initio,* by selection, elimination, tautonymy, or by substitution, and after a few general remarks gives a key to the various groups in which he places the species. These are thirteen in number arranged in the following order: *Diana* group; *Neglectus* group; *Leucampyx* group; *Nictitans* group; *L'Hoesti* group; *Mona* group; *Albigularis* group; *Erythrogaster* group; *Petaurista* group; *Cephus* group; *Æthiops* group; *Patas* group; and the *Talapoin* group. In discussing the species of these various assemblies, he does not follow the order given in the key, for the *Patas* group which is first, is treated last, probably for the excellent reason that his material for these monkeys was so scant, he could give descriptions of only two species, and a simple list of those described with references to the publications in which they were to be found. This was of less importance, however, for these red monkeys should not be placed in *Cercopithecus,* (LASIOPYGA), as they properly represent a distinct genus, ERYTHROCEBUS. The first group treated is the *Diana* under the subgenus *Pogonocebus* with two species *diana* and *roloway,* with a general description of the two forms and a Key; also a short list of synonymy. Similar treatment is given to all the group except the *Patas.* The *Neglectus* group has but two species, *C. brazzæ-formes* Pocock, = L. BRAZZÆ (A. Milne-Edw.); and L. NEGLECTA (Schlegel); L. BRAZZÆ (Milne-Edw.), being considered a synonym of the last species, a conclusion not accepted by the present writer. The next is the *Leucampyx* group under the subgenus *Diademia* Reich., with three species and seven subspecies, the latter established in a great measure because the Author's material was insufficient to indicate the proper rank they should have. The species are L. KANDTI; L. OPISTHOSTICTA; L. LEUCAMPYX, and L. NIGRIGENIS as a subspecies; L. DOGGETTI first described; L. LEUCAMPYX; (*C.*) *stuhlmanni* (nec Matschie), = L. PRINCEPS (Elliot); L. CARRUTHERSI first described; L. PLUTO; and L. BOUTOURLINI. A Key and descriptions are given. The *Nictitans* group has but two species, and one subspecies: L. NICTITANS; *L. n. laglazei* first described; and L. MARTINI. The *Albigularis* group contains eight species: L. ALBIGULARIS; L. KOLBI; L. MOLONEYI; L. STAIRSI; L. RUFITINCTA first described; L. FRANCESCÆ; L. PREUSSI; L. LABIATA, and five subspecies: L. BEIRENSIS; L. RUFILATUS; L. ALBITORQUATA; L.

HINDEI and L. MOSSAMBICUS. There is a Key, but it does not include the subspecies. All these subspecies, with the exception of L. ALBITORQUATA are described for the first time. The *Mona* group has seven species: L. MONA; L. CAMPBELLI; L. BURNETTI; L. DENTI; L. WOLFI; L. GRAYI; L. POGONIAS; and one subspecies, *L. p. nigripes*. The *L'Hoesti* group has but one species, L. L'HOESTI; and one subspecies *L. l. thomasi* described for the first time. *Erythrogaster* group has but one species, L. ERYTHROGASTER. The *Petaurista* group under subgenus *Rhinostictus* Trouess., has three species: *L. petaurista* (nec Schreb.), = L. FANTIENSIS (Matschie); L. ASCANIUS; L. SIGNATA; and two subspecies, L. BUTTIKOFERI and L. SCHMIDTI. The *Cephus* group has three species: L. CEPHUS; L. ERYTHROTIS; and L. SCLATERI; and one subspecies L. CEPHODES first described. The *Æthiops* group has eight species: *L. sabæa* (Linn.), undeterminable, but (*C.*) *sabæus* Pocock, (nec Linn.), = L. CALLITRICHUS (I. Geoffroy); *L. æthiops* (Linn.), undeterminable, but (*C.*) *æthiops* Pocock, (nec Linn.), = L. GRISEOVIRIDIS (Desm.); L. MATSCHIE; L. DJAMDJAMENSIS; L. TANTALUS; L. CYNOSURA; L. PYGERYTHRA; and L. NIGROVIRIDIS first described; and seven subspecies: (*C.*) *ellenbecki* = L. HILGERTI (Neum.); L. HILGERTI; L. BUDGETTI first described; L. RUFOVIRIDIS; L. WHYTEI and L. JOHNSTONI both described for the first time, and L. CENTRALIS. The Talapoin group under subgenus *Miopithecus,* has one species, L. TALAPOIN, and one subspecies L. ANSORGEI first described; and finally the *Patas* group, which, as has already been stated, gives descriptions of but two species, L. PATAS, and L. PYRRHONOTUS, both marked as subspecies (!), and apparently the only ones known to the Author, (although L. SANNIO (Thos.), was represented in the British Museum Collection by the type), and a list of the described species is given, or taken from Herr Matschie's paper on the genus. Mr. Pocock's method of employing subspecific names is somewhat perplexing, for it is generally understood by Naturalists that a subspecies can only be properly established when there are intergrades between it and a closely related species. Now nearly all the recognized subspecies in this paper, save perhaps *L. nigripes* (Du Chaillu), and which is intermediate between L. GRAYI and L. POGONIAS in only one particular, a little more black on the back, and *L. ellenbecki* which is the same as L. HILGERTI, have no intermediates, and consequently should not be classed as subspecies. That eventually some may be discovered to have intermediate forms between them and the nearest allied species is possible, but until such forms are found, the animals in question should have specific rank.

The Keys, to those who have but slight knowledge of the species of LASIOPYGA are useful, but in all save the *Mona* and *Petaurista* groups, the subspecific forms are omitted, though it must be said that with a somewhat doubtful exception, L. NIGRIPES, all the so-called subspecies in these two Keys, are undoubtedly entitled, so far as we have knowledge of them at present, to a full specific rank. The paper is illustrated by cuts of various species taken from life, and four uncolored plates of the heads of various allied species. The principal defect in a paper such as this, treating of the largest group of the Primates, is, that the Author was entirely unacquainted with any specimens of the genus, not accessible in London and its vicinity, and it is to be regretted, that when he undertook so important a task, and which he accomplished so far as his material permitted with conscientious fidelity, he had not been able to acquire a wider view and firmer grasp of his subject, which an investigation of the far greater material of this group in Continental Museums would have given him.

1908. *Lönnberg, Expedition to Kilimanjaro-Mweru.*

In this work a LASIOPYGUS from Mt. Kilimanjaro, is somewhat doubtfully separated from L. ALBIGULARIS as (*C.*) *a. kinobotensis.*

1909. *D. G. Elliot, in Annals and Magazine of Natural History.*

LASIOPYGA INSIGNIS; L. INSOLITA; *L. t. griseisticta; L. rubella; L. grayi pallida;* L. STICTICEPS and L. SILACEA; first described under *Cercopithecus.*

1910. *D. G. Elliot, in Annals and Magazine of Natural History.*

LASIOPYGA INOBSERVATA first described as *Cercopithecus inobservatus.*

1910. *O. Thomas, in Annals and Magazine of Natural History.*

Lasiopyga ascanius whitesidei first described as *Cercopithecus a. whitesidei.*

1910. *D. G. Elliot, in Proceedings of the United States National Museum.*

LASIOPYGA LUTEA first described as *Cercopithecus luteus.*

1911. *J. Buttikofer, in Notes from the Leyden Museum.*
LASIOPYGA PETRONELLÆ first described as *Cercopithecus petronellæ.*

1912. *N. Hollister, in Smithsonian Miscellaneous Collections.*
LASIOPYGA CALLIDA described as *Lasiopyga pygerythra callida.*

GEOGRAPHICAL DISTRIBUTION OF THE SPECIES AND SUBSPECIES.

LASIOPYGA is strictly an African genus and its members are dispersed over the entire continent, save the extreme northern part lying along the Mediterranean Sea. They are also found on the large island of Fernando Po, but not on Madagascar. Of the known species about thirty-nine are East African, thirty-four West African, two South African, both ranging northward on the east and west coasts, and the dispersion of six remaining species is quite unknown. It will thus be perceived that there are something like eighty species and races at present recognized and doubtless many more are yet to be discovered, as the interior of Africa is better known. Beginning in the northeastern portion of the continent, we have in the region of the White Nile, L. NEGLECTUS Schlegel, its range unknown, probably somewhat restricted as the type is still unique although the species was described over thirty years ago. On the Upper Nile in Sennaar, Kordofan and Abyssinia, L. GRISEOVIRIDIS ranges; while from Southern Abyssinia to Lake Rudolph, L. BOUTOURLINI has its home. In the same kingdom in the dark forests through which the Omo and Sobat rivers flow, L. MATSCHIE was discovered, and in the forest of Djamdjam east of Lake Abaya, L. DJAMDJAMENSIS was procured. In the Galla country west of Somaliland at the head waters of the Webbi Schebeli, L. HILGERTI was met with. On the Juba River, along the boundary of British East Africa, and extending southward to the west shore of Victoria Nyanza, and thence into Ankole at 5,000 feet elevation, also on the islands of Dakota and Sesse, L. CENTRALIS is found; and in the Great Rift Valley on the south side of Lake Naivasha, L. CALLIDA was taken. North and west of Lake Albert, and also southward to Lake Kivu, on Kividjvi Island in the lake, L. STUHLMANNI is found, and at the south end, L. AURORA was discovered; while west and south of Lake Albert L. PRINCEPS was procured; and between the lakes Albert Edward and Victoria Nyanza, L. BUDGETTI was met with, and L. DOGGETTI in Southwest Ankole, and to the west of the same lake, at Bembara, L. GRISEISTICTA was taken. On Mt. Ruwenzori, at an elevation of 10,000 feet, on the eastern side, L. CARRUTHERSI was met with. In the Ituri forest near the Uganda line, Upper Congo, L. DENTI was obtained, and at Port Alice, also on the Upper Congo, L. SCHMIDTI was procured. Between Lake Kivu and Lake Tanganyika, L. THOMASI and L. KANDTI were discovered. To the east of Victoria Nyanza in Kavirondo, L. NEUMANNI was found. On Mt. Kenia L. KOLBI dwells; and in the Kenia district in the vicinity of the mountains, *L. c. lutea,* L. HINDSI, and L. RUBELLA are met with. In the Nairobi forest, L. K. NUBILA and L. ALBIGULARIS have been taken, while farther eastward, possibly in the vicinity of Mombassa, L. ALBIGULARIS and L. RUFITINCTA were secured. In German East Africa, *L. a. kobotensis* was procured on Mt. Kilimanjaro, and on the south side of the same mountain at five thousand feet elevation, *L. c. johnstoni* was found. On the Rufigi River south of Zanzibar, *L. a. rufilata* was obtained. Proceeding southward into Nyassaland, we find L. OPISTHOSTICTA at Lake Mweru, and L. LEUCAMPYX extends its range from Nyassaland to the French Congo and Angola. On Mt. Chiradgula, *L. c. whitei* has been taken, and at the north end of Lake Nyassa, L. MOLONEYI dwells. On Mt. Walla, west of the last named lake, L. FRANCESCÆ was obtained. In Angoniland on the east bank of the Loangwa River, L. SILACEA is found. In Portuguese East Africa, in Mozambique, *L. s. mossambicus* is found, and L. ALBIGULARIS is met with in Mashonaland, and ranges southward to the north east Transvaal, and in the Pungwe River district, L. RUFOVIRIDIS and *L. a. beirensis* range; while from the Delta of the Zambesi, L. STAIRSI comes; in Cape Colony two species of this genus are found, L. PYGERYTHRA ranging north as far as Mombassa and Mt. Kilimanjaro on the east coast, and L. LABIATA going to Mozambique on the east coast, and to Angola on the west. In Central Africa at N'dongo-leti, Upper Ubanqui River, L. STICTICEPS is found. In West Africa, beginning at the most western point we find in Senegambia L. CALLITRICHUS, which extends its range to the Niger River. In Sierra Leone, L. CAMPBELLI is found. Liberia has two species, L. DIANA which is very common, and L. BUTTIKOFERI. The Gold Coast has L. ERYTHROGASTER at Lagos; and L. ROLOWAY, L. FANTIENSIS, L. BURNETTI ranging east to Cameroon, and L. MONA. In northeastern Nigeria at Lake Chad, is *L. t. alexandri,* and in northern Nigeria, their dispersion unknown, are L. TANTALUS and L. INSOLITA. In Cameroon are found L. PREUSSI, L. BRAZZÆ going to the French Congo, L. NICTITANS ranging to Sette Cama, L. GRAYI going to the Congo River, and L. SCLATERI in Benin. In Guinea L. PETAURISTA alone is found. In Gaboon several species are found, *L. n. laglaizi,* L. CEPHUS ranging to the Congo River, L. CEPHODES, L. NIGRIPES, and *L. g. pallida.* On the Island of Fernando Po the following species are found: L. MARTINI supposedly, L. ERYTHROTIS, L. POGONIAS, and *L. preusse insularis.* In Congo State are L. ASCANIUS ranging into Angola, *L. a. whitesidei* in Central Congo on the Upper Lulong River, L. CYNOSURA (Mossamedes to Cunene), and L. WOLFI, (Brazzaville, Batumpas, Sunkurie), and in the Congo forest, locality unknown, L. INSIGNIS, and L. PETRONELLÆ are found. Angola contains, L. SIGNATA probably at Banana, and L. PLUTO. In Congoland L. L'HOESTI was obtained, but its habitat is quite unknown, and the same may be said of the following: L. NIGRIVIRIDIS, L. INOBSERVATA, L. WERNERI, L. NIGRIGENIS, and L. ALBITORQUATA.

KEY TO THE SUBGENERA.

A. Body slender; limbs and tail long; cheek pouches present; fingers webbed at base.
  a. General color various, size small......**Allochrocebus, p.* 297
  b. General color speckled black and yellow.
    a.' Arms, hands and feet, and body beneath black or grayish ....*Melanocebus, p.* 306
    b.' Tail red or mostly red..............†*Neocebus, p.* 319
    c.' General color grayish, a mingling of gray, black, tawny or yellow in the colors of the hair ....*Chlorocebus, p.* 325
    d.' Ears tufted; light colored brow band usually extending upward to the crown, or ears. Stripes on head in some species; body speckled ....*Mona, p.* 349
    e.' White collar present in some species with ear tufts present or absent; aural region red or speckled ....‡*Insignicebus, p.* 359
    f.' Light colored stripe across thigh...*Pogonocebus, p.* 376

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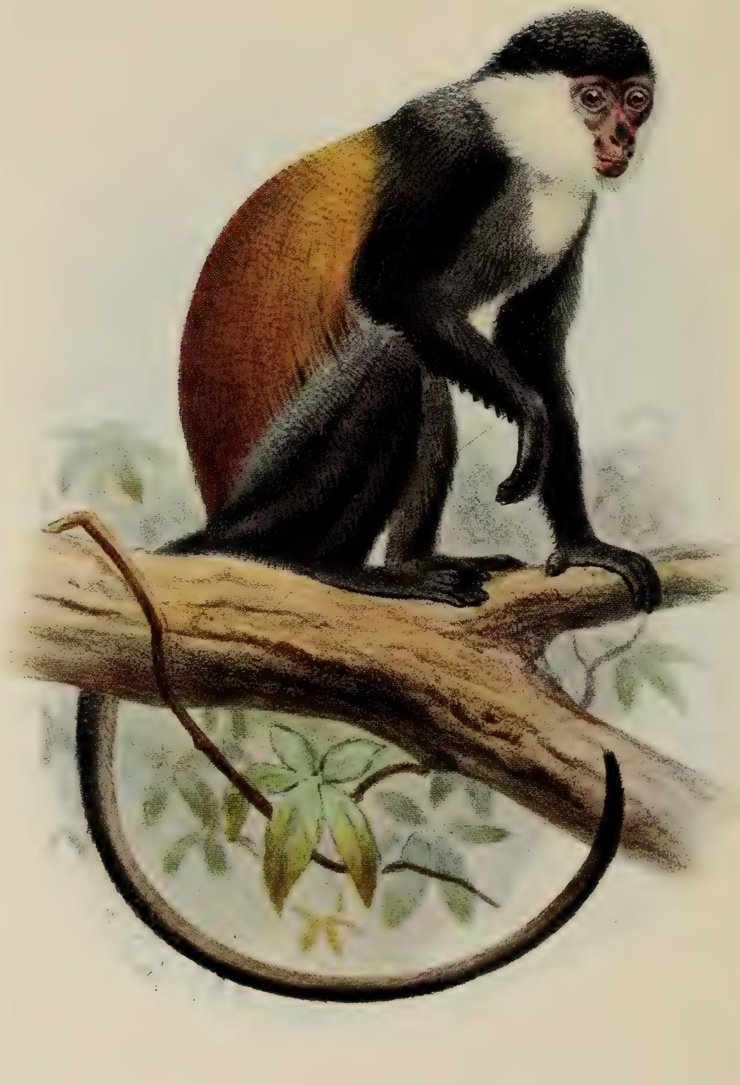
*αλλοχωσ, strange appearance, and κηβοσ, a long-tailed monkey.

†νεοσ, new, and κηβοσ, a long-tailed monkey.

‡Insignis, remarkable, and Cebus or κηβοσ, a long-tailed monkey.

To the above key has been added the number of the page on which is each subgenus, so that the groups with their respective keys can be readily found.



LASIOPYGA L' HOESTI

Subgenus 1. Allochrocebus.

General color various, size small.

KEY TO THE SPECIES.

A. Head black speckled.
  a. Brow band indistinct, white; ruff on sides of throat white.................................*L. l'hoesti.*
  b. Brow band ochraceous rufous; no ruff on sides of throat....................................*L. insolita.*

LASIOPYGA L'HOESTI (Sclater).

Cercopithecus l'hoesti Sclat., Proc. Zool. Soc. Lond., 1898, p. 586, pl. XLVIII; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 714, pl. XLI, fig. 2.

L'HOEST'S GUENON.

Type locality. Congoland. Type in British Museum.

Geogr. Distr. Unknown.

Genl. Char. Remarkable for its black head and elongate white ruff on sides of throat.

Color. Face black; scattered black hairs on nose and lips; sides of face covered with short white and black hairs, longest in a line below eyes, and running back to whiskers; head, neck, space between shoulders, and sides of body jet black speckled with white; very narrow, rather indistinct white line on forehead; sides of head sparsely speckled with white, none at all about temples; dorsal region, from between shoulders to tail, speckled black and ochraceous rufous; shoulders, arms, legs, hands, feet, under parts of body and inner side of limbs jet black; whiskers long, directed upwards and backwards concealing the ears, and together with the front, sides of neck and throat, continuing to a point on the chest, white with a slight tinge of gray; nose black; tail, speckled white and black all around, tip black. Ex type British Museum.

Measurements. Total length, 1,080; tail, 600; foot, 110. Skull: total length, 98; intertemporal width, 44.7; occipito-nasal length, 81.6; Hensel, 65; zygomatic width, 64.4; median length of nasals, 15.7; palatal length, 36.5; length of upper molar series, 27.5; length of mandible, 63; length of lower molar series, 32.2. Ex type Gardens of the Zoological Society of London.

This is a peculiarly colored monkey, showing an affinity to members of various groups, and yet seems distinct from them all. Mr. Pocock in his paper, (l. c.) has made L. THOMASI (Matschie), a subspecies of L. L'HOESTI, but this does not seem to be the proper place for that species, as Matschie's type is very like L. PREUSSI but paler on the back, and the tail is lighter; the limbs, however, and shoulders are black as in L. L'HOESTI.

LASIOPYGA INSOLITA (Elliot).

Cercopithecus insolitus Elliot, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 258.

Type locality. Northern Nigeria, (Bakie). Type in British Museum.

Genl. Char. Reddish brow band; upper parts black speckled.

Color. Hairs on forehead ochraceous rufous and black over nose where it is deepest in color, paler toward sides; beneath this is a narrow black line, rather indistinct at sides; head black, speckled on crown with ochraceous, slightly paler than the hairs in front; hairs over temples black, rather long, directed backwards passing over the ears; long hairs on cheeks directed backwards under and behind ears, black speckled with yellow; occipital region black with but very few yellow speckles; entire upper parts of body grayish black minutely spotted with cream buff; flanks grayish black faintly speckled with white; arms and hands black, unspeckled; legs black, speckled with cream buff on upper part of thighs, and with white lower down, and also on legs to ankles; feet black; chin, throat, chest, anal region, inner side of arms to elbows, and thighs to knees, whitish yellow; abdomen gray with a yellow tinge; tail above at base like back, grading into black speckled with white, and then into jet black on apical fourth, beneath yellow speckled at base, then profusely speckled with white, causing the midway section to appear quite gray, and jet black at tip. Ex type British Museum.

Measurements. Total length, 1,060; tail, 680; foot, 115. Skull: has entire braincase gone, only the rostrum, zygomatic arches and mandible remaining. Width of orbits, inner edge, 43.4; median length of nasals, 14.3; zygomatic width, 55.4; palatal length, 24.6; length of mandible, 24.3. Ex type British Museum.

The type is a young animal, but it is quite different in appearance from any of the known species, so different in fact, I hardly know where to place it, for like L. L'HOESTI it does not seem to have any near allies. The unique type was obtained in northern Nigeria by Dr. Bakie's expedition, and is in the Collection of the British Museum.

Subgenus 2. Rhinostictus.

General color black and yellow speckled.

KEY TO THE SPECIES AND SUBSPECIES.

A. Black brow band encircling the head.
  a. General color above very dark, black predominating ....*L. petaurista.*
  b. General color above lighter, black not predominating ....*L. fantiensis.*
  c. General color above ochraceous buff and black ....*L. erythrogaster.*
B. Black brow band not encircling the head.
  a. Crown of head speckled black and yellow.
    a.' A patch of grayish yellow below eye .....*L. buttikoferi.*
    b.' A black patch below eye ....*L. ascanius.*
    c.' No patch below eye ....*L. a. whitesidei.*
  b. Crown of head speckled black and dark buff ...*L. signata.*
  c. Crown of head speckled black and tawny .....*L. schmidti.*

LASIOPYGA PETAURISTA (Schreber).

Simia petaurista Schreb., Säugth., I, 1775, p. 103, (nec Auct.); I. Geoff., Cat. Primates, 1851, p. 19, No. 2; Wagn., Schreb., Säugth. Suppl., V, 1840, p. 119, tab. XIXB; V, 1855, p. 50; Reichenb., Vollständ. Naturg. Affen, 1862, p. 165.

LESSER WHITE-NOSED GUENON.

Type locality. Guinea.

Geogr. Distr. Guinea, West Africa.

Genl. Char. Color very dark, much darker than L. FANTIENSIS Matschie, (*petaurista* Auct.); tail very long, slender.

Color. End of nose white; rest of nose, cheeks, lips, line across forehead, and one from behind eye to below ear to hind neck, black; top of head with hairs black ringed with yellow; upper parts and sides of body, the hairs gray at base then ringed with ochraceous rufous and black; shoulders and arms to elbows, and hind legs to ankles gray at base of hairs then ringed with black and yellow; forearms deep black, hairs tipped with yellow; sides of neck, throat, entire under parts and inner side of limbs white; chin sometimes black; hands and feet black; tail above black, hairs with one ochraceous rufous band, beneath white.

Measurements. Total length, 1,020; tail, 570. Ex spec. Guinea, Berlin Museum. Skull: total length, 154; occipito-nasal length, 76.2; Hensel, 54.1; zygomatic width, 52.7; intertemporal width, 38.4; median length of nasals, 12.9; length of upper molar series, 23.3; length of mandible, 53.5; length of lower molar series, 25.2.

The *Simia petaurista* as figured and described by Schreber, (l. c.) is a very dark almost black monkey, speckled with yellowish, and came from Guinea. The characters here given have been overlooked by Authors, and quite another animal, the one from the Gold Coast, has always borne the name given by Schreber. Herr Matschie has clearly shown this fact in his paper, and named the *petaurista* Auct., a much lighter animal, L. FANTIENSIS. Guinea specimens of this Guenon also in the Berlin Museum amply demonstrate the differences existing between the two forms, and the correctness of Schreber's plate.

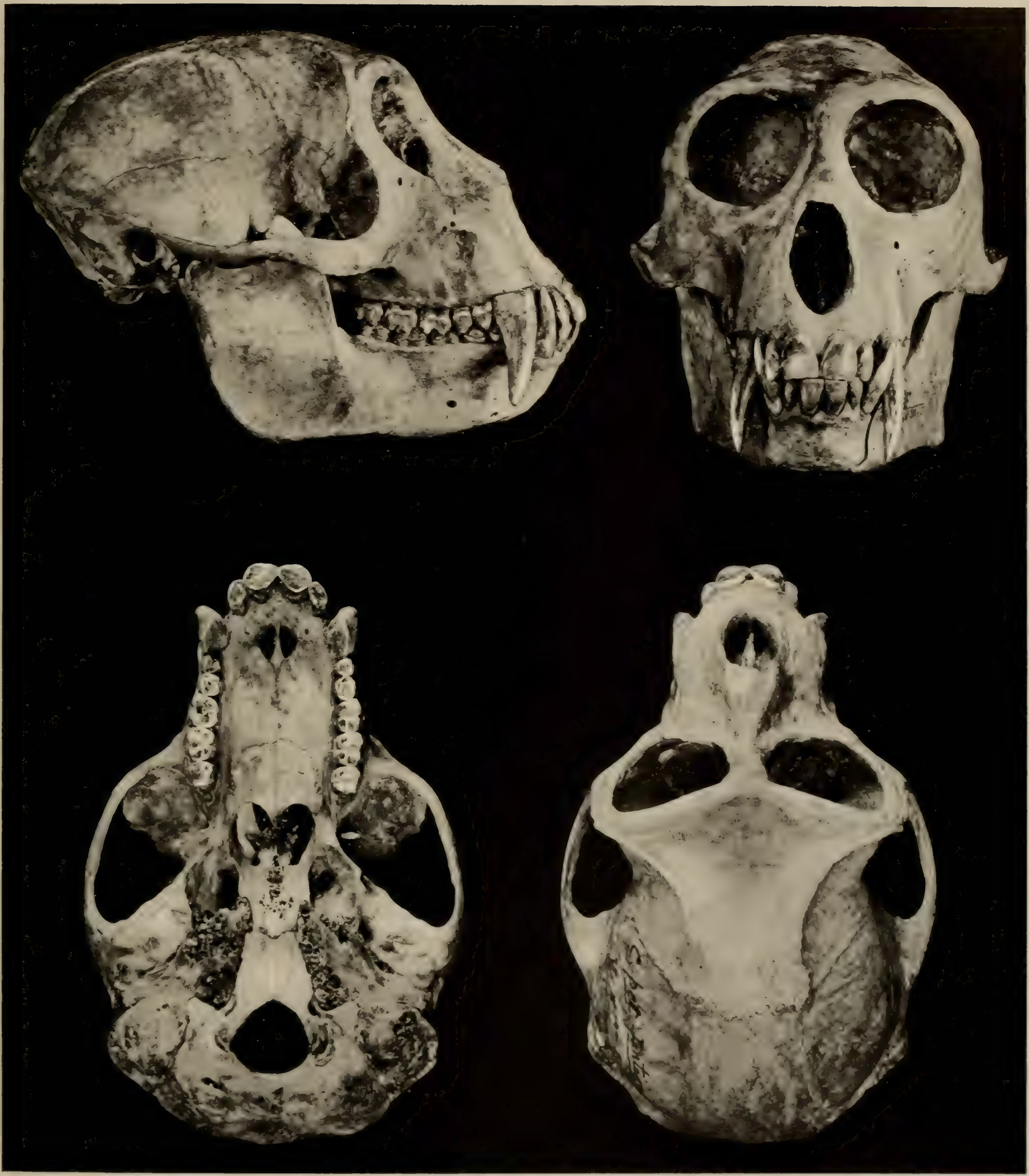
LASIOPYGA FANTIENSIS (Matschie).

Cercocebus petaurista fantiensis Matschie, Sitzungsb. Ges. Naturf. Freund., Berlin, 1893, pp. 64, 98; Pousarg., Ann. Scien. Nat., 1896, p. 264.

Cercopithecus petaurista (nec Schreb.), Erxl., Syst. Regn. Anim., 1777, p. 35; Bodd., Elench. Anim., 1784, p. 60; E. Geoff., Cours Hist. Nat. Mamm., 1828, p. 19, 8me Leçon; Martin, Nat. Hist. Mammif. Anim., 1841, p. 539; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 100, 101; Gray, Proc. Zool. Soc. Lond., 1868, p. 182; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 20; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 86; Anders., Cat. Mamm. Ind. Mus. Calc., Pt. I, 1881, p. 58, (Part.); Matschie, Sitzungsb. Ges. Nat. Freund., Berlin, 1892, p. 226; Sclat., Proc. Zool. Soc. Lond., 1893, p. 244; Forbes, Handb Primates, II, 1894, p. 44, (Part.); Pousarg., Ann. Scien. Nat., 1895, p. 271; 1896, 7me Sér., III, p. 176; 1896, I, 8me Sér., p. 264; Pocock, Proc. Zool. Soc. Lond., II, 1909, p. 718.

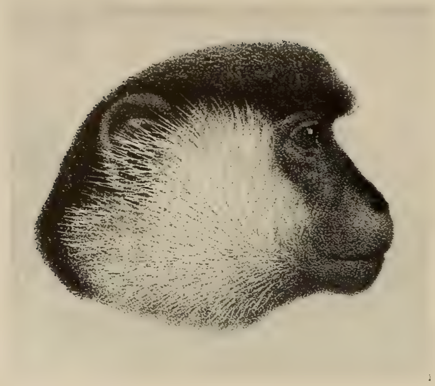
L'Ascaigne (nec Audeb.), F. Cuv., Hist. Nat. Mamm., Livr. XIV, 1820, pl. L'Ascaigne femelle.

Type locality. Fantie, Gold Coast, West Africa. Type in Berlin Museum. Very young.



LASIOPYGA FANTIENSIS.

No. 73.4.30.5. Brit. Mus. Coll. ⅘ Nat. Size.



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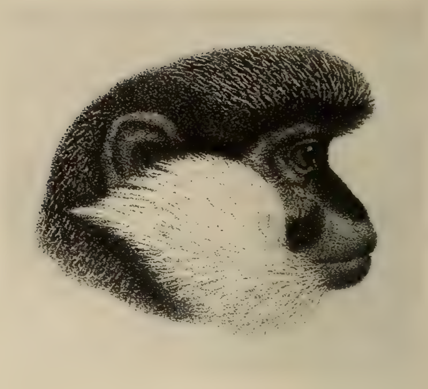

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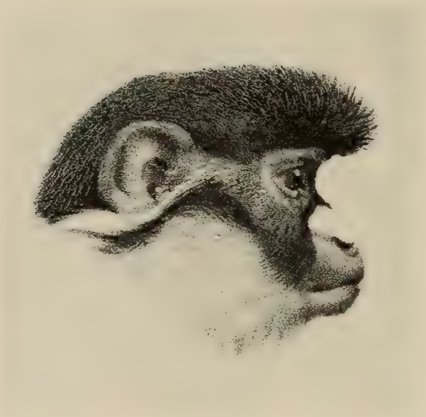

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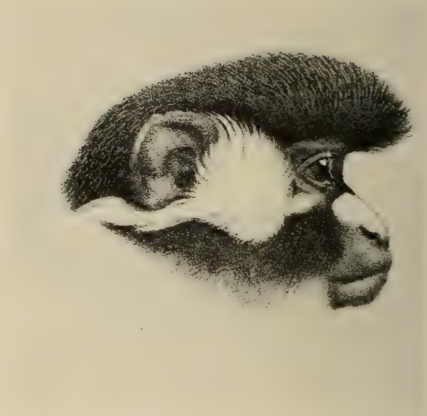

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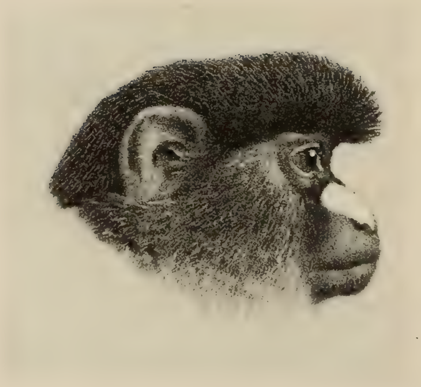

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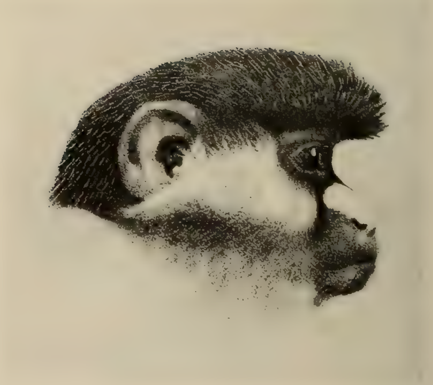
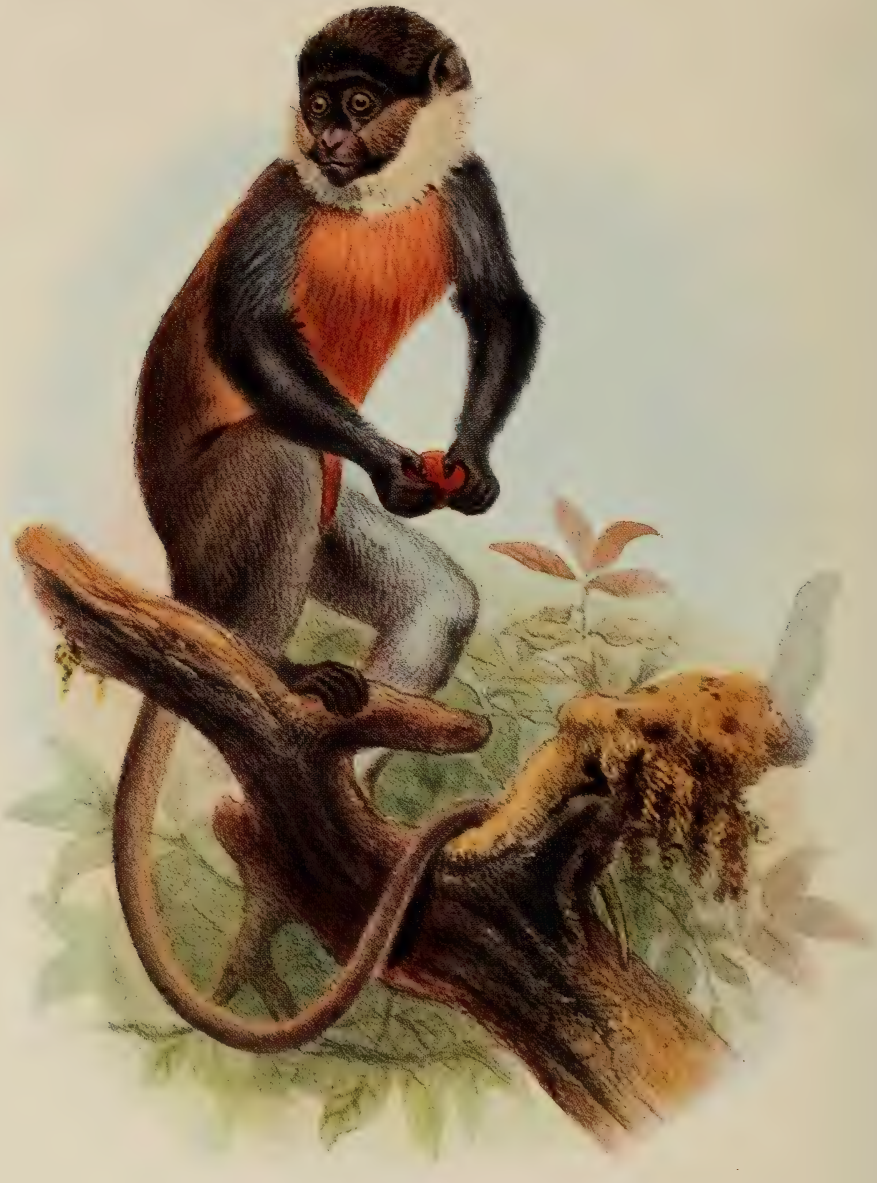


6.

1. LASIOPYGA L'HOESTI.
3. LASIOPYGA BUTTIKOFERI.
5. LASIOPYGA SIGNATA.

2. LASIOPYGA ERYTHROGASTER.
4. LASIOPYGA ASCANIUS.
6. LASIOPYGA SCHMIDTI.



LASIOPYGA ERYTHROGASTER

Genl. Char. Band on forehead extending around to back of head.

Color. Face black, white patch on end of nose; black brow band extending around side of head above ears and across occiput, a branch projecting forward at corner of eye over cheeks to upper lip; near the corner of the eye, a white streak runs over temples and beneath ear to side of neck, beneath which is a corresponding black streak; top of head speckled yellow and black; entire rest of upper parts, shoulders, arms and legs on outer side, speckled tawny ochraceous and black, becoming paler on legs below the knees and less thickly speckled; wrists, hands and feet black sparsely speckled with yellow; beneath the black on cheek the hairs are longer than the rest, and directed upwards and backwards, and with the chin, throat, lower side of neck, chest, entire under parts, and inner side of thighs are white; inner side of forearms and legs gray; tail at base like back, the yellow speckling becoming lighter as it goes towards the tip where it is almost lost in the dominant black color, beneath yellowish white for basal half, then speckled gray and black, and tip black.

Measurements. Total length, 1,035; tail, 655; foot, 110. Skull: total length, 111.1; occipito-nasal length, 92; intertemporal width, 53.5; Hensel, 87; zygomatic width, 71.9; width of braincase, 55; median length of nasals, 19.4; palatal length, 42.6; length of upper molar series, 26.1; length of upper canines, 21.7; length of mandible, 77.4; length of lower molar series, 31.7.

This is a much lighter colored species than L. PETAURISTA, showing much less black on the upper parts. The type in Berlin Museum is a baby, not half grown. Herr Matschie has made this a subspecies of L. PETAURISTA Schreb., but as I have never seen any intermediate between it and that species, it seems best, for the present at least, to accord it specific rank.

LASIOPYGA ERYTHROGASTER (Gray).

Cercopithecus erythrogaster Gray, Proc. Zool. Soc. Lond., 1866, p. 169, pl. XVI; 1868, p. 182; Murie, Proc. Zool. Soc. Lond., 1866, p. 380; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 128; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 69; Sclat., Proc. Zool. Soc. Lond., 1893, p. 252; 1894, p. 1; Forbes, Handb. Primates, II, 1894, p. 46; Pousarg., Ann. Scien. Nat., III, 7me Sér., 1896, p. 178; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 715, fig. 185.

RED-BELLIED GUENON.

Type locality. Lagos? West Africa. Type in British Museum.

Color. "Skin of face round eyes bluish gray, lips and chin pinkish gray." (Pocock). No signs of these colors on the type, the face being black where bare. Nose black, cheeks speckled black and yellow; black band across forehead extending across sides of head over ears and meeting at back of crown; crown speckled black and yellow; back of head and hind neck, and space between shoulders speckled with black and yellowish white; dorsal region to tail, and flanks speckled black and ochraceous buff; long hairs of whiskers extending back of ears, sides of neck, and throat white; shoulders and arms on outer side to elbows black speckled with white, forearms black; outer side of thighs gray, speckled with black and ochraceous buff like back; legs below knees to ankles gray; entire under parts of body ochraceous rufous; inner side of arms above elbows, and legs to ankles gray; legs below knees with a yellow tinge; tail, at root above like back, rest brownish black speckled with yellow, beneath greenish gray; hands black, feet black speckled with grayish white. Ex type British Museum.

Measurements. Total length, 725; tail, 345; foot, 100. No skull.

The type is a young animal with a black nose, but some adults have a white nose patch. This species is not nearly allied to L. PETAURISTA as some writers have believed, the only similarity in coloring between them being the black frontal band going around the head. It is nearer in coloring, so far as the dorsal region is concerned, to L. FANTIENSIS.

LASIOPYGA BUTTIKOFERI (Jentink).

Cercopithecus buttikoferi Jent., Notes Leyd. Mus., VIII, 1886, p. 56; Matschie, Sitzungsb. Gesell. Naturf. Freunde, Berlin, 1893, p. 99; Sclat., Proc. Zool. Soc. Lond., 1893, p. 244; Forbes, Handb. Primates, II, 1894, p. 47; Pousarg., Ann. Scien. Nat., III, 7me Sér., 1896, pp. 179, 203.

Cercopithecus petaurista buttikoferi Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 718, pl. XL, fig. 6.

BUTTIKOFER'S GUENON.

Type locality. Liberia, West Africa. Type in Leyden Museum.

Geogr. Distr. Only known from type locality.

Color. Exactly like L. FANTIENSIS except that the black band from forehead does not cross over top of head, and there is no white patch below eye. No skull. Ex type Leyden Museum.

Measurements. Skull: occipito-nasal length, 86.3; Hensel, 68.5; zygomatic width, 60.7; intertemporal width, 37.2; median length of nasals, 17.7; length of upper molar series, 25.2; length of mandible, 67.4; length of lower molar series, 30. Ex British Museum specimen 91. 11. 3. 1. St. Paulo River, Liberia.

Lasiopyga ascanius (Audebert).

Simia ascanius Audeb., Hist. Nat. Singes, 1799, Fam. 4me, Sec. 2, fig. 13.

L'Ascaigne G. Cuv., Règn. Anim., 1829, p. 93.

Cercopithecus melanogenys Gray, Ann. Mag. Nat. Hist., XVI, 1st Ser., 1845, p. 212; *Id.* Proc. Zool. Soc. Lond., 1849, p. 7, pl. IX, fig. 1; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 21; Monteiro, Proc. Zool. Soc. Lond., 1860, p. 112; Reichenb., Vollständ. Naturg. Affen, 1862, p. 105, fig. 254; Sclat., Proc. Zool. Soc. Lond., 1893, p. 245; Matschie, Sitzungsb. Gesell. Naturf. Freunde, Berlin, 1893, pp. 99, 215; Forbes, Handb. Primates, II, 1894, p. 49.

Cercopithecus ascanius Reichenb., Vollständ. Naturg. Affen, 1862, p. 106, fig. 260; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 87; Pousarg., Ann. Scien. Paris, III, 7me Sér., 1896, pp. 183, 208; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 719, fig. 186, pl. XL, fig. 5.

Cercopithecus histrio Reichenb., Vollständ. Naturg. Affen, 1863, p. 106, figs. 256-259.

Cercopithecus picturatus Santos, Journ. Scien. Lisb., XI, 1886, p. 98; Matschie, Sitzungsb. Gesell. Naturf. Freunde, Berlin, 1893, pp. 99, 215.

Type locality. Unknown. *Type in Paris Museum.

Geogr. Distr. Congo to Angola; Oubangui, Alima, (Pousargues); Encoge south of Bambe, (Monteiro); Quimpampala, (Santos).

Color. Nose white; sides of head from nose to ears white, covered by a black bar from nose to side of neck; band across forehead black; top of head, upper parts and sides of body black, thinly speckled on head with yellow, and on body with ochraceous; limbs black; arms above elbows and hind limbs sparsely speckled with ochraceous; under parts, inner side of arms above elbows, and of legs to ankles, grayish white; tail above, black on dorsal half speckled with ochraceous, maroon on apical half, beneath white on basal half, red on apical half. Ex type Paris Museum. Space around eyes and upper lip blue; end of nose white, ears and lower lip flesh color. (Audebert).

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*This species is not mentioned by I. Geoffroy in his Catalogue, his "*Ascaigne*" (p. 19), being (*C.*) PETAURISTA Schreber, ex Guinea.

Measurements. Total length, 1,068.4; tail, 606.2. Skull: presumably in the specimen.

The example above described and marked as the *Type* does not altogether agree with Audebert's figure and description, especially as regards the tail which he says is "olivâtre," and figures this member mainly as of a pale olive yellow without any red whatever. I saw no examples in the Paris Museum like Audebert's figure, nor in any other collection, and if he has made no error in his colors, the above example cannot be his type and we have yet to obtain the true ASCANIUS.

The following is Audebert's description of his *"L'Ascaigne":* "L'Ascaigne a treize pouces depuis le museau jusqu'à l'origine de la queue; sa face est bleu; on remarque sur les paupières une legère teinte de violet; les yeux sont roux, et les sourcils, formés par de long poils, sont noirs; ainsi que la partie supérieure du nez, qui, a son extremité est couvert de poils fins, très-courts, et du blanc le plus éclatant; les lèvres sont un peu pileuses, la supérieure est bleuâtre, l'inférieure est presque de couleur de chair; le front, le tour de la face et les joues sont couvertes de poils noirs. Audessous de chaque oreille on remarque une grande touffe de poils blancs, qui divergent en partant d'un centre commun, et forment une espèce de rosette. Les oreilles sont nues, de couleur de chair, et depassent a peine le poil, qui, en général, est très long et très touffu. Le sommet de la tête, le cou, le dos et la queue de cet animal, sont olivâtres; la barbe, la poitrine, le ventre, l'intérieur des quatres membres sont d'un gris foncé, et la partie extérieur des bras est noire."

This description was taken from the living individual, then in the menagerie in the Jardin des Plantes, Paris. I have never seen, as I have said, any specimen like it, and if we reject the example marked *Type* in the Paris Museum, "L'Ascaigne" of Audebert will have to take its place among the unknown species yet to be received. Schlegel (l. c.) in his description of L. ASCANIUS states that in his example "Le blanc du dessous de la queue change, des la deuxième tiers de la longeur de cette organe, au *roux, rougeâtre,"* which is in accord with the color of the tail in the type in the Paris Museum. It is possible that the light in the cage may have betrayed Audebert and caused him to mistake the color of the tail, as the animal would not remain quiet to have its portrait painted. At all events the discrepancy exists, and the type and Audebert's figure and description do not agree.

Lasiopyga ascanius whitesidei (Thomas).

Cercopithecus ascanius whitesidei Thos., Ann. Mag. Nat. Hist., 8th Ser., IV, 1909, p. 542.

Type locality. Upper Lulange River, Central Congo. Type in British Museum.

Genl. Char. Nose spot buff not white; cheek stripe less developed; black cheek patch of L. ascanius wanting.

Color. Above tawny olive, hairs ringed with black and ochraceous; frontal line to base of ears, black; temporal whorl creamy white; cheek band darker; under parts creamy white; outer side of forearms blackish; outer side of thighs like back, of legs slaty gray; inner side of limbs whitish; hands blackish; feet black, buff speckled; tail like back at base grading into rufous, and then to black at tip, beneath white, then reddish, and black at tip.

Measurements. Total length, 1,410; tail, 880; foot, 120. Skull: "breadth of braincase, 52; length of upper molar series, 22."

Lasiopyga signata (Jentink).

Cercopithecus signatus Jent., Notes Leyd. Mus., VIII, 1886, p. 55; Sclat., Proc. Zool. Soc. Lond., 1893, p. 257; Matschie, Sitzungsb. Gesell. Naturf. Freunde, Berlin, 1893, pp. 100, 215; Forbes, Handb. Primates, II, 1895, p. 45; Pousarg., Ann. Scien. Nat., III, 7me Sér., 1896, p. 180; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 721, pl. XL, fig. 3.

Cercopithecus martini Sclat., Proc. Zool. Soc. Lond., 1884, p. 176, pl. XIV; 1893, p. 245, (nec Waterh.); Forbes, Handb. Primates, II, 1894, p. 47, (nec Waterh.).

Cercopithecus nictitans Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 89, (Part.).

JENTINK'S GUENON.

Type locality. Unknown. Type in Leyden Museum.

Geogr. Distr. West Africa. Banana? border of French Congo and Angola. (Jentink).

Genl. Char. No black band on back of head.

Color. Band across forehead, and from eyes to ears black; top of head and outer side of arms above elbow, dark buff, the hairs being blackish and tips dark buff, giving the dominant color; upper parts and sides of body reddish speckled, the hairs being slate color and tips red; forearms, hands and feet black; legs black speckled with reddish; sides of face and cheeks yellowish; nose black except a white spot on tip; chin, under sides of head, throat, under parts, inner side of arms above elbow, and inner side of legs white; tail above like back, beneath yellowish. No skull. Ex type Leyden Museum.

Measurements. Size equal to L. FANTIENSIS.

This form is not unlike L. FANTIENSIS but it differs from that species and L. PETAURISTA by not having the black band passing from eye to eye around the back of the head.

LASIOPYGA SCHMIDTI (Matschie).

Cercopithecus ascanius (nec Audeb.), Sclat., Proc. Zool. Soc. Lond., 1887, p. 502; Matschie, Sitzungsb. Gesell. Naturf. Freunde, Berlin, 1893, p. 100; Forbes, Handb. Primates, II, 1894, p. 49.

Cercopithecus schmidti Matschie, Zool. Anz., 1892, p. 161; Sclat., Proc. Zool. Soc. Lond., 1893, p. 245.

Cercopithecus ascanius schmidti Pocock, Proc. Zool. Soc. Lond., 1907, p. 720, pl. XI, fig. 4.

SCHMIDT'S GUENON.

Type locality. Manyema. Type in Berlin Museum.

Geogr. Distr. Uganda, Port Alice, Manyema, Bumba, Upper Congo.

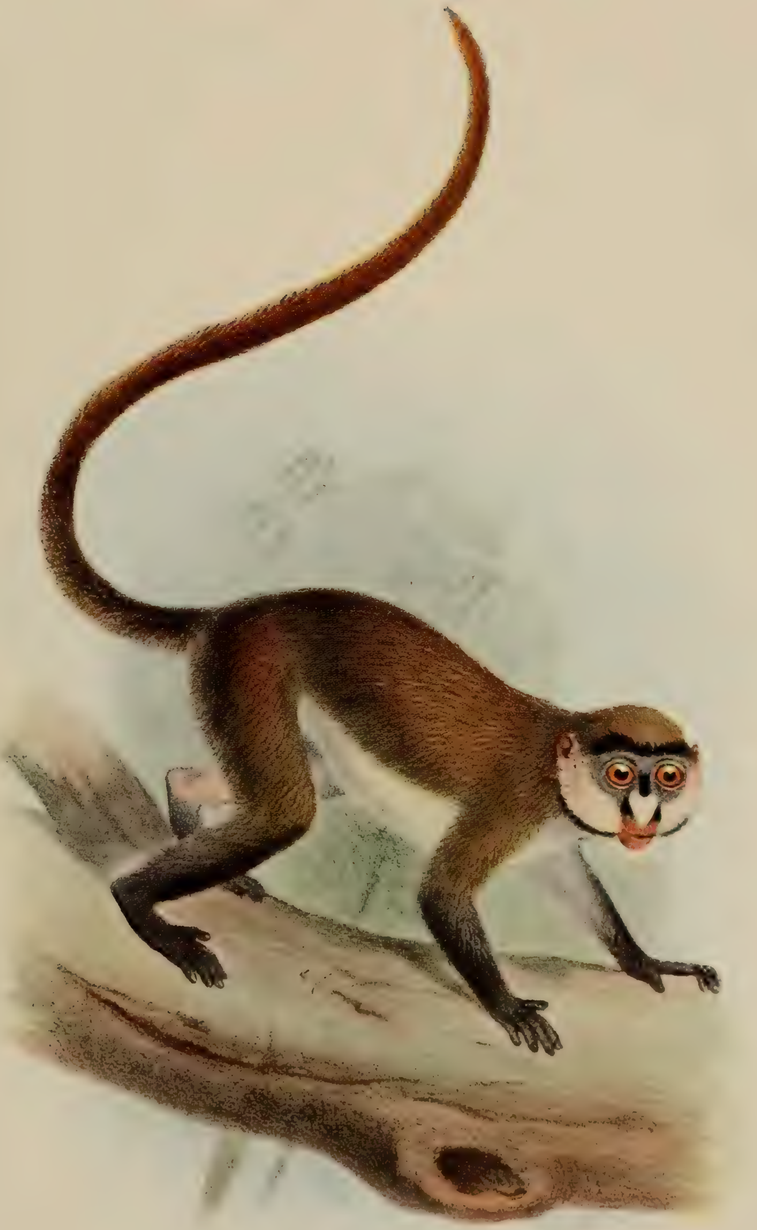
Genl. Char. Tail very long; ochraceous rufous, nose white.

Color. End of nose white; face, legs, forehead and band from eye to ear, and one from corner of mouth to neck below and beyond ear black; sides of face and head white; top of head and neck, and entire upper parts, arms to elbows, and thighs tawny, the hairs being ringed with black and tawny, the latter color predominating; forearms black, legs reddish black, speckled with buff; hands and feet black; chin, throat, under parts and inner side of limbs, white; tail, basal sixth like back, remainder ochraceous rufous; tuft of hair on ears white. Ex type Berlin Museum.

Measurements. Total length, 1,275; tail, 810. Skull: total length, 82; occipito-nasal length, 79; intertemporal width, 40; zygomatic width, 48; median length of nasals, 13; length of upper molar series, 20; length of mandible, 44; length of lower molar series, 17. Ex type Berlin Museum.

Subgenus 3. Melanocebus.

Arms, hands and feet black; under parts of body wholly black or grayish.



Lasiopyga schmidti

KEY TO THE SPECIES AND SUBSPECIES.

- A. Under parts of body entirely black.
  - *a.* Top of head jet black.
    - *a.*' Hairs of brow band speckled to base ...*L. leucampyx.*
    - *b.*' Hairs of brow band white at base.
      - *a.*" Cheeks speckled ....*L. pluto.*
      - *b.*" Cheeks nearly uniform black ....*L. nigrigenis.*
  - *b.* Top of head speckled.
    - *a.*' Black band on upper back.
      - *a.*" Black band on upper back unspeckled ....*L. boutourlini.*
      - *b.*" Black band on upper back speckled..*L. opisthosticta.*
    - *b.*' No band on upper back ....*L. aurora.*
- B. Under parts of body sooty, or iron gray, or grayish white.
  - *a.* No white spot on nose.
    - *a.*' Head above to nape jet black.
      - *a.*" No black band on chest.
        - *a.*''' Tail speckled with cream buff and black ....*L. stuhlmanni.*
        - *b.*''' Tail speckled with silvery white ....*L. neumanni.*
      - *b.*" Black band on chest.
        - *a.*''' Rump tinged with reddish brown ....*L. doggetti.*
        - *b.*''' Rump without reddish brown tinge.
          - *a.*"" Area between shoulders jet black ....*L. princeps.*
          - *b.*"" Area between shoulders speckled with gray......*L. carruthersi.*
  - *b.* With white spot on nose.
    - *a.*' Head above speckled.
      - *a.*" Under part of body all speckled.......*L. nictitans.*
      - *b.*" Color generally grayer ....*L. n. laglaizi.*
      - *c.*" Under parts speckled only on lower half ....*L. sticticeps.*
      - *d.*" Under parts grayish white ....*L. martini.*

Lasiopyga leucampyx (Fischer).

La Diane femelle F. Cuv., Hist. Mamm., Livr. XLII, 1824, pl. XV a.

Simia leucampyx Fisch., Syn. Mamm., 1829, p. 20.

Cercopithecus diana F. Cuv., Hist. Mamm., 2nd ed., 1833, p. 47, pl. XIV.

Cercopithecus diadematus I. Geoff., Bélang., Voy., Zool., 1834, p. 51; Less., Spec. Mamm., 1840, p. 73.

Cercopithecus leucampyx Martin, Mammif. Anim., 1841, p. 529; I. Geoff., Archiv. Mus. Hist. Nat. Paris, II, 1843, p. 557; *Id.* Cat. Primates, 1851, p. 20; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 48; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 108, 185; Reichenb., Vollständ. Naturg. Affen, 1862, p. 108, fig. 268; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 836; Anders., Cat. Mamm. Ind. Mus. Calc., 1881, p. 57; Giglioli, Zool. Anz., X, 1887, p. 510; Sclat., Proc. Zool. Soc. Lond., 1893, p. 253, (Part.); Forbes, Handb. Primates, II, 1894, p. 75; Thos., Proc. Zool. Soc. Lond., 1896, p. 789; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 689.

DIADEM GUENON.

Type locality. Guinea.

Geogr. Distr. Guinea, Angola and the Congo; West Africa to Nyassaland; British Central Africa.

Color. A band across forehead and spot on side of head near eye white; top and back of head, neck, shoulders, limbs, hands and feet, and entire under parts from chin, black; hairs on forepart of head in center tipped with white; top and side of body grizzled gray becoming blackish on rump; root of tail black, remainder grayish black, tip black. No skull. Ex specimen in Paris Museum, died in the Menagerie in 1899.

Lasiopyga pluto (Gray).

Cercopithecus pluto Gray, Proc. Zool. Soc. Lond., 1848, p. 56, (text fig. p. 57), pl. III; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 48; Reichenb., Vollständ. Naturg. Affen, 1862, p. 108, figs. 269, 270; Sclat., Proc. Zool. Soc. Lond., 1870, p. 670; 1871, p. 36; 1872, p. 97; Scott Elliot, Proc. Zool. Soc. Lond., 1895, p. 341; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 692.

Type locality. Angola. Type in British Museum.

Genl. Char. Like L. LEUCAMPYX, but top of head, shoulders, and nape of neck speckled with gray.

Color. Brownish white band on forehead speckled with black; top of head and temples black sparsely speckled with gray; sides of head black speckled with buff; upper part of back black minutely speckled with white; rest of upper parts and sides profusely speckled with cream buff; inner and outer sides of arms, and hands jet black; legs and feet black, but tinged with brown and slightly speckled on inner side of thighs near body; chest and under parts, and inner side of legs sooty gray; hair of tail all gone except a little about midway the length, which is black. Ex type British Museum.

Measurements. Skull of L. PLUTO in the British Museum No. 50. 7. 7. 9. not the type; total length, 100.6; occipito-nasal length, 86.2; intertemporal width, 44.4; Hensel, 72.1; zygomatic width, 69.6; median length of nasals, 17.8; palatal length, 38.6; length of upper canines, 16.1; length of upper molar series, 26.9; length of mandible, 74.7; length of lower molar series, 32.9.

The type does not seem to be a fully adult individual, the coloring of the band on forehead, the under parts and legs are brownish black and sooty instead of jet black, appearing to indicate immaturity. The type came from Angola. Fortunately there is an adult LASIOPYGA from Dando, North Angola, which is doubtless the same species as PLUTO, and which presents us with adult pelage. It may be described as follows: band on forehead, narrow at ends and broad in the center, white with a row of speckled black and white hairs at the base of the band in front; sides of head and throat black speckled with white; top of head and temples black; back of head and neck speckled black and white, overlaid by long jet black hairs, these last extending down to between the shoulders; upper part of body and flanks profusely speckled black and white, the latter here greatly predominating; inner and outer side of arms and legs, hands, feet, and entire under parts below throat jet black; chin and upper part of throat sooty gray; tail, basal half black speckled with white, apical half black.

Mr. Pocock in his review, (l. c.) gives the character to separate L. PLUTO from L. STUHLMANNI as the "speckling of the summit of the head with the nape and shoulders," but the specimen from Angola, which I consider the adult *pluto* has the summit of the head jet black, so it would seem that the speckling on the head was due to immaturity. L. PLUTO's claims for being a distinct species must therefore rest on some other differences to separate it from L. STUHLMANNI, and these appear to consist of a much whiter brow band, the hairs being white for at least half the basal length, and not speckled to the base as in L. STUHLMANNI, and the under parts being uniformly black speckled with white, and not speckled with gray.

LASIOPYGA NIGRIGENIS (Pocock).

Cercopithecus leucampyx Sclat., Proc. Zool. Soc. Lond., 1893, p. 253 (nec Fischer).

Cercopithecus stuhlmanni nigrigenis Pocock, Proc. Zool. Soc. Lond., 1907, p. 692, pl. XXXIX, fig. 1.

Type locality. West Africa, locality unknown. Type in British Museum.

Genl. Char. Sides of neck and cheeks, jet black.

Color. Brow band white, broadest in the center; the front line mixed with long dark hairs; forepart of cheeks, and face beneath eyes covered with hairs speckled white and black; rest of head, neck behind, and on sides, space between shoulders, shoulders, arms, hands, legs, feet and tail except at base, jet black; body above and below shoulders, and flanks iron gray, the hairs being gray and banded on apical half with black and white; chin and throat white; rest of under parts jet black. Ex type British Museum.

Measurements. Total length, 1,110; tail, 680; foot, 130, (skin).

The unique type of this form in the British Museum is stated to have come from West Africa, but no particulars are given. It seems in its jet black legs and under parts to be more nearly allied to L. BOUTOURLINI than to L. STUHLMANNI and differs from it in having the cheeks and sides of the neck jet black, and in the white brow band.

LASIOPYGA BOUTOURLINI (Giglioli).

Cercopithecus boutourlini Gigl., Zool. Anz., X, 1887, p. 510; Sclat., Proc. Zool. Soc. Lond., 1893, pp. 256, 441; Forbes, Handb. Primates, II, 1894, p. 69; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 693.

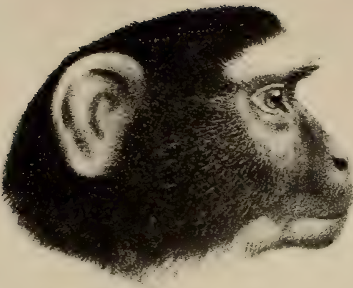
Cercopithecus albigularis Gigl., Ann. Mus. Civ. Genov., 2nd Ser., VI, 1888, p. 8, (nec Sykes).

Cercopithecus omensis Thos., Proc. Zool. Soc. Lond., 1900, p. 801.

BOUTOURLINI'S GUENON.

Type locality. Kaffa, East Africa. Type in Florence Museum.

Geogr. Distr. Shoa, Abyssinia, North East Africa. Charada forest; Kaffa; Abugifas in Grimma; Province of Gojam (Sclater); Omo River, Lake Rudolf.



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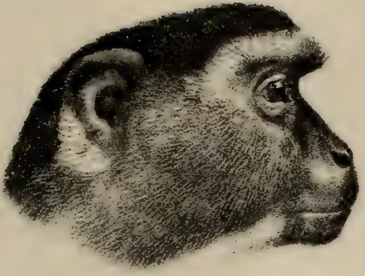

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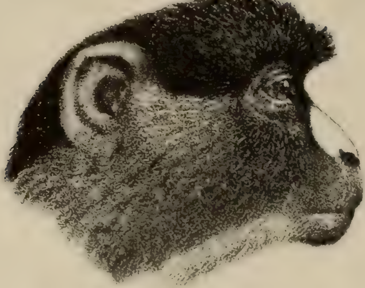

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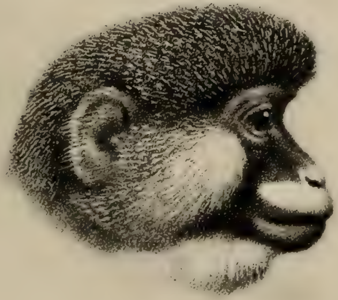

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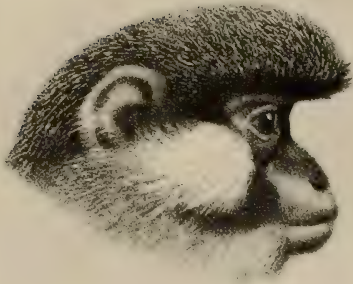

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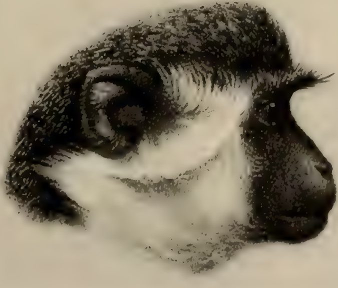

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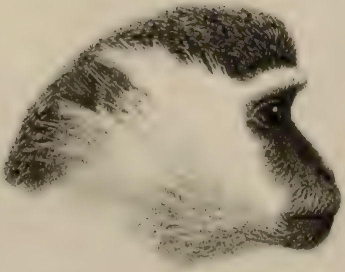


7.

1. Lasiopyga nigrigenis.

2. Lasiopyga princeps.
4. Lasiopyga cephus.
6. Lasiopyga callitrichus.

3. Lasiopyga martini.
5. Lasiopyga erythrotis.
7. Lasiopyga griseoviridis.

Genl. Char. Similar to L. ALBIGULARIS but nose and upper lips white; under surface and limbs black.

Color. Fore part and sides of head from beneath eyes, and sides of neck thickly speckled with black and white; no defined band on forehead; top of head and nape black sparsely speckled with white; hind neck, band across back at base of neck, shoulders, outer and inner sides of arms and legs, hands and feet jet black; upper parts and sides of body speckled black and white, the blue gray basal portion of the hairs imparting a gray tinge over all; upper lip covered with short white hairs; chin grayish white; throat yellowish white; entire under parts jet black; tail at base black speckled with white, remainder jet black.

Measurements. Total length, 1,300; tail, 700; foot, 145; ear, 30. Skull: total length, 116.4; occipito-nasal length, 95.6; Hensel, 81.3; intertemporal length, 41.4; zygomatic width, 75.6; palatal length, 81.9; median length of nasals, 23.9; width of braincase, 58.3; length of upper molar series, 46.4; length of mandible, 78.2; length of lower molar series, 32.9; length of upper canines, 21.2. Ex specimen in British Museum from Kaffa, 6. 11. 1. 1.

Unfortunately during my visit to the Florence Museum, the Director, Signor Giglioli, was absent from the city and I was not able to find the type of this species, but the specimen above described, obtained at the same place as the type, is a co-type, and therefore is an acceptable representative of the species.

LASIOPYGA OPISTHOSTICTA (Sclater).

Cercopithecus opisthostictus Sclat., Proc. Zool. Soc. Lond., 1893, p. 725; Forbes, Handb. Primates, II, 1894, p. 72; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 694.

RUMP-SPOTTED GUENON.

Type locality. Lake Mweru, British Central Africa. Type in British Museum.

Color. Face dark brown; upper lip covered with short white hairs; forehead, and sides of face and neck thickly speckled with white and black; a bar across the forehead being nearly all white; top, and back of head, nape, and back of neck black speckled with white, but less profusely; band across upper back at base of neck jet black, sparsely speckled with white on middle of back; outer and inner sides of arms, and hands jet black; upper part and sides of body gray speckled with black and buff; upper edge of thighs, legs and feet jet black; rest of thighs and legs iron gray, grizzled, similar to the upper parts of body, but much darker; chin and throat grayish white; rest of under parts jet black; tail at base pale grizzled gray, remainder jet black. Ex Arnot's specimen in British Museum, from Kundilungo Mountains west of Lake Mweru, Nyassaland.

Measurements. Total length, 1,420; tail, 820, (skin); no skull.

The type was a flat skin, in the British Museum, but not so good a representation of the species as the one above described. The species is easily distinguished in the group to which it belongs, by the pale yellowish gray back; and the greater amount of speckling on the head and hind neck.

LASIOPYGA AURORA (Thomas and Wroughton).

Cercopithecus leucampyx aurora Thos. and Wrought., Trans. Zool. Soc. Lond., XIX, 1910, p. 485.

Type locality. South end of Lake Kivu, south of Lake Albert Edward, Africa. Type in British Museum.

Color. Head missing. Upper parts of body and flanks speckled buff, yellow and black, hairs having three black rings; hairs on upper part of back white at base then gray, the apical portion banded with black and yellow; hairs on lower back yellowish white on basal half, then buff yellow banded with black; these combinations give a grayish tinge to the upper back, but a rich yellow to the sacral portion; inner and outer side of arms jet black; outer side of thighs speckled gray and black; inner side jet black; hands and feet wanting; entire under parts jet black; tail at root mixed gray, yellow and black, remainder above and beneath mixed gray and black, the gray gradually disappearing until near the end which becomes jet black with here and there a white speck. Ex type British Museum.

Measurements. Tail, 700. No skull. Skin incomplete.

LASIOPYGA STUHLMANNI (Matschie).

Cercopithecus stuhlmanni Matschie, Sitzungsb. Ges. Naturf. Freunde, Berlin, 1893, p. 225.

Cercopithecus otoleucus Sclat., Proc. Zool. Soc. Lond., 1902, p. 237, pl. XXI.

STUHLMANN'S GUENON.

Type locality. North of Kingawanga, north west of Lake Albert Edward, Africa, and Kividjvi Island in Lake Kivu. Type in Berlin Museum.

Geogr. Distr. Lake Albert Edward to the Mpanga forest, East Africa.

Genl. Char. Size large, tail very long; ears tufted posteriorly.

Color. Broad yellowish white band with numerous long black hairs in front, some of them banded with cream buff; top of head to nape black; upper part and sides of body speckled cream buff and black; between shoulders long black hairs overlie but do not obscure the speckling, which is visible as far as the head; cheeks, and on sides of head extending to shoulders, speckled cream buff and black; face slaty black, lips covered with short white hairs; shoulders, arms, hands and feet jet black; legs from hips to ankles speckled cream buff and black, giving them a grayish tone; chin and throat white; under parts of body grayish, speckled with cream buff; tail like back for two thirds the length, remainder black; ears fringed on posterior side with buff hairs. Ex type Berlin Museum.

Measurements. Total length, 1,500; tail, 990; foot, 185. Skull: total length, 110.3; occipito-nasal length, 90.9; intertemporal width, 45.1; Hensel, 82; zygomatic width, 70.5; breadth of braincase, 62.2; median length of nasals, 17.4; palatal length, 42.5; length of upper molar series, 25.1; mandible wanting. Ex type Berlin Museum.

Mr. Scott Elliot says of this Monkey (l. c.): "I brought home a specimen of *Cercopithecus pluto* (a West African form), or of the allied *C. stuhlmanni.* The Wakondja in the Nyamwamba valley, East Ruwenzori, make a sort of pouch or pocket of the skin, which they carry over the shoulder, so that the animal must be common. This Monkey is extremely shy, and usually the only sign of its presence is the noise of a tremendous crash amongst the branches a long distance away. Once I saw very well a troop of another monkey, probably a *Cercopithecus* also, I was alone, of course, without a gun, and sitting down very quietly on a fallen tree. Four or five of the older males came quite close after some hesitation. They had white marks on the face, simulating eyebrows, moustache and imperial, and their expression was melancholy and unhappy."

LASIOPYGA NEUMANNI (Matschie).

Cercopithecus neumanni Matschie, Sitzungsb. Gesell. Naturf. Freunde, Berlin, 1905, p. 260.

Type locality. Kwa Kitolo, North Kavirondo, German East Africa. Type in Berlin Museum.

Genl. Char. Almost exactly like L. STUHLMANNI but sides of head yellowish, and under parts slightly darker; nose violet brown.

Color. Long hairs on forehead, projecting upwards and outwards, sides of face, and head, neck, entire body and legs speckled black and buff, the hairs being gray at base then banded with black and buff; top and back of head, arms, hands and feet uniform black; tail black, hairs banded with silvery white. The buff is most conspicuous on the back, which may be said to be almost of that hue, the buff bands being so numerous and close together, but are less numerous on legs and under parts. Ex type Berlin Museum.

Measurements. Total length, 1,190; tail to end of hairs, 700. Young. Skull: total length, 95; occipito-nasal length, 82; zygomatic width, 62; intertemporal width, 37; median length of nasals, 19; length of upper molar series, 24; length of mandible, 64; length of lower molar series, 28. Young animal. Ex type Berlin Museum.

Between the range of this species and L. STUHLMANNI, L. PRINCEPS is met with.

LASIOPYGA DOGGETTI (Pocock).

Cercopithecus stuhlmanni doggetti Pocock, Proc. Zool. Soc. Lond., 1907, p. 691.

DOGGETT'S GUENON.

Type locality. S. W. Ankole, between Lakes Victoria and Albert Edward. Type in British Museum.

Genl. Char. Tail speckled with rufous; back yellowish, sides and belly gray.

Color. Broad band on forehead, sides of face, head, and neck, extending nearly to center of throat, gray speckled with black and buff; rest of head above, and on sides covering the ears, nape and back of neck, jet black; jet black band slightly speckled across back at base of neck; shoulders, inner and outer side of arms and hands jet black; back and flanks gray thickly speckled with black and buff, tinged with greenish on middle back, and reddish brown on lower back and rump; legs from hips blackish gray on outer side slightly ticketed with white, inner side ash gray; feet black; chin and center of throat grayish white; dusky bar across breast at shoulders; rest of under parts ash gray; tail speckled brownish red at base, remainder, except tip which is black, thickly speckled with white. Female, juv. Ex type British Museum.

Measurements. Total length, 1,142; tail, 645. Skull: total length, 95.6; occipito-nasal length, 70; Hensel, 29.2; zygomatic width, 65.2; palatal length, 29.5; median length of nasals, 15; length of mandible, 62.3. Ex type British Museum.

The unique type is quite a young female, and the measurements probably give a very imperfect idea of the dimensions of either body or skull. The last molar has not yet been produced in either jaw, so the length of the tooth rows could not be given.

Lasiopyga princeps (Elliot).

Cercopithecus stuhlmanni (nec Matschie), Pocock, Proc. Zool. Soc. Lond., 1907, p. 690, pl. XXXIX, fig. 2.

Cercopithecus princeps Elliot, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 304.

Type locality. Mpanga forest, west and south of Lake Albert, East Africa. Type in British Museum.

Geogr. Distr. Mpanga forest, and Mount Ruwenzori, 5,000 feet elevation, East Africa.

Color. Forehead, sides of face and head, (extending on to sides of throat), speckled black and white; top of head, nape, hind neck, space between shoulders, arms, hands and feet, jet black; upper parts and sides of body speckled black and white; legs black faintly speckled with white on thighs, and very slightly so on legs beneath knees; chin and throat pure white; a conspicuous black band across breast below throat, rest of under parts iron gray, the hairs being much less speckled with white than on the upper parts, the general tone more grayish; tail speckled black and gray on basal half, darker than the back, remainder jet black to tip; ears with a few white hairs on top; face slate color; upper lip covered with short white hairs. Ex type British Museum.

Measurements. Total length, 1,530; tail, 915; foot, 165; ear, 50, (Collector). Skull: total length, 113.5; occipito-nasal length, 88; Hensel, 78.7; zygomatic width, 76.2; intertemporal width, 42.6; width of braincase, 56.2; median length of nasals, 17.7; palatal length, 39.1; length of upper molar series, 25.1; length of mandible, 77.2; length of lower molar series, 31.1; length of upper canines, 25.9. Ex type British Museum.

This species differs from L. STUHLMANNI Matschie, in having a black band across the breast, in the uniform black on upper back and hind neck, and in the blacker legs; and from L. CARRUTHERSI in having the space between shoulders jet black, this part being speckled with white in that species.

Lasiopyga carruthersi (Pocock).

Cercopithecus stuhlmanni carruthersi Pocock, Proc. Zool. Soc. Lond., 1907, p. 691.

CARRUTHERS' GUENON.

Type locality. East side of Mt. Ruwenzori, elevation 10,000 feet. Type in British Museum.

Color. This species is similar to L. PRINCEPS, (not L. STUHLMANNI, as compared by Mr. Pocock), which has no black bar across chest, but differs in the absence of white on the hairs of the brow band, and the area between shoulders is speckled with gray, this part in L. PRINCEPS being jet black like the top of the head. The abdomen is less speckled and darker. The species is represented in the British Museum Collection by the type.

Measurements. Size about equal to L. PRINCEPS. No skull.

LASIOPYGA NICTITANS (Linnæus).

Simia nictitans Linn., Syst. Nat., I, 1766, p. 40; Bodd., Elench. Anim., 1784, p. 50.

Cercopithecus nictitans Erxl., Syst. Regn. Anim., 1777, p. 35; F. Cuv., Hist. Nat. Mamm., 1833, 2me ed., p. 50, pl. XV; Less., Spec. Mamm., 1840, p. 75; Martin, Mammif. Anim., 1841, p. 536; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 50; Dahlb., Stud. Zool. Fam. Reg. Anim. Nat., fasc. I, 1856, pp. 100, 105; Reichenb., Vollständ. Naturg. Affen, 1862, p. 106, figs. 258-261; Gray, Proc. Zool. Soc. Lond., 1868, p. 182; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 21; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 89; Sclat., Proc. Zool. Soc. Lond., 1893, p. 246; Matschie, Sitzungsb. Gesell. Naturf. Freunde, Berlin, 1893, p. 101; Forbes, Handb. Primates, II, 1894, p. 51; Pousarg., Ann. Scien. Nat., II, 7me Sér., 1896, pp. 198, 207; Bates, Proc. Zool. Soc. Lond., 1905, p. 70; Elliot, Cat. Mamm. Field Columb. Mus., F. C. M. Pub., VIII, 1906, p. 569, Zool. Ser.; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 696.

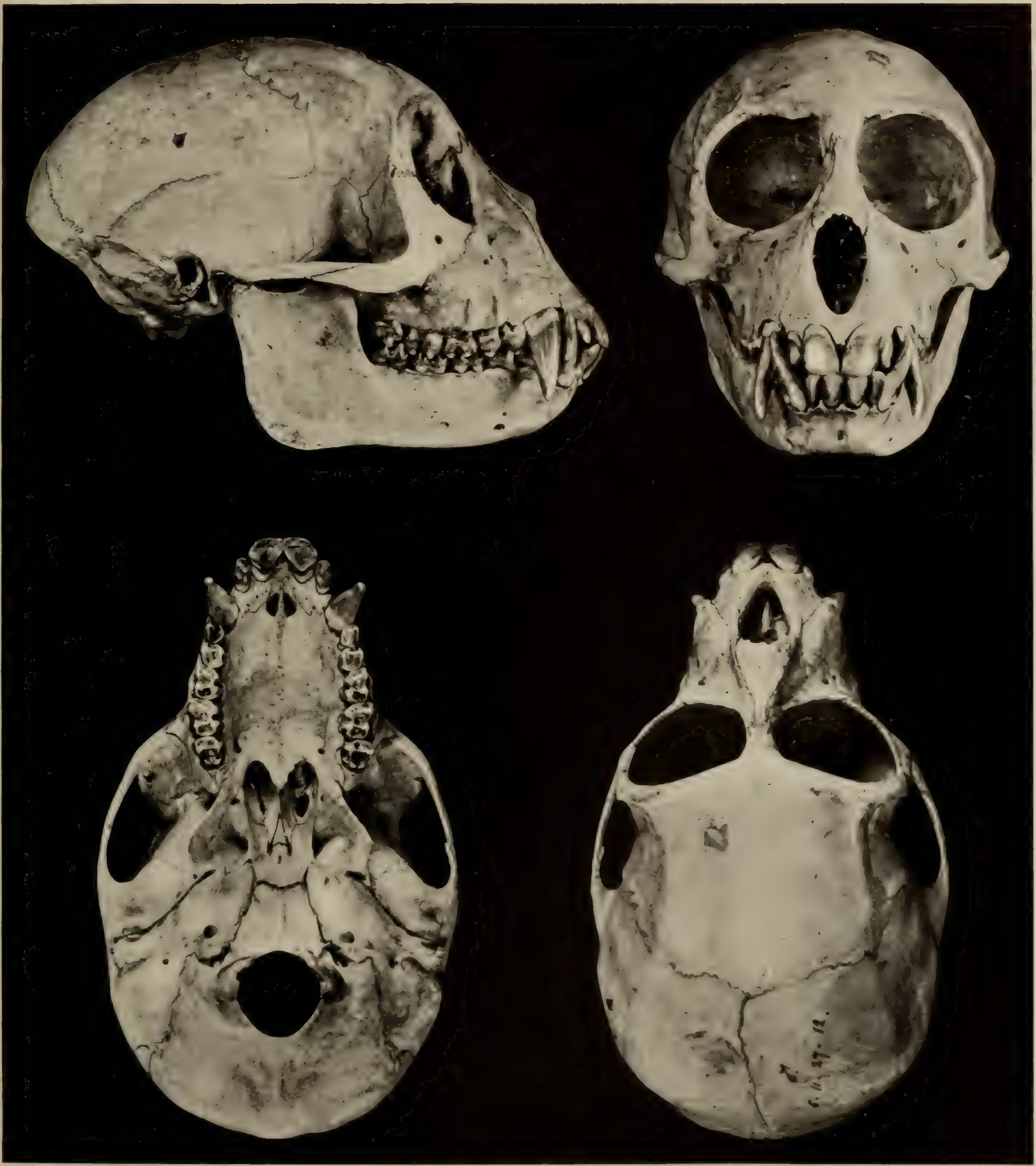
Lasiopyga nictitans Illig., Prodr. Syst. Mamm. et Avium, 1811, p. 68.

HOCHUER GUENON. Native name *Avem.* (Bates).

Type locality. Guinea?

Geogr. Distr. West Africa, Cameroon to Sette Cama in French Congo; Eupudu, Bulu country, Cameroon, (Bates); at San Benito, Alima River, Magumba, Banqui and Sette Cama. (Pousargues).

Color. Head above and at sides, entire upper parts, and legs black speckled with white, base of hairs gray; over the nose and eyes on forehead a band of white hairs banded with black; arms from shoul-



LASIOPYGA NICTITANS.

SIDE VIEW REVERSED.

No. 5.11.27.12. Brit Mus. Coll. ⅘ Nat. Size.

ders, and hands black and unspeckled; chin and throat brownish gray; black band across upper part of chest; entire under parts grayish black sparsely speckled with white; tail black sparsely speckled with white on basal third; feet black slightly speckled; eyelids flesh color; face black; large white patch on end of nose.

Measurements. Total length, 1,320; tail, 805; foot, 148; ear, 28, (Collector, Bates). Skull: total length, 102.4; occipito-nasal length, 87.4; intertemporal width, 72.9; Hensel, 66.1; zygomatic width, 63.6; median length of nasals, 16.4; palatal length, 34.6; length of upper molar series, 25.4; length of mandible, 65.6; length of lower molar series, 31.5. Ex specimen from near Benito River, in British Museum.

LASIOPYGA NICTITANS LAGLAIZI (Pocock).

Cercopithecus nictitans laglaizi Pocock, Proc. Zool. Soc. Lond., 1907, p. 698.

Type locality. Gaboon.

Genl. Char. Similar to L. NICTITANS, but hair longer and grayer.

Color. General hue slightly grayer than L. NICTITANS, otherwise no difference is perceptible. Ex type British Museum.

Measurements. Size about same as L. NICTITANS. The skull attributed to this type specimen is that of a very young female, and evidently never belonged to it.

The type has been in the British Museum Collection since 1880, was mounted and has been made into a skin. It formerly belonged to the La Glaize Collection and bears on the ticket the locality "Gaboon." This is so close to the Benito River, for I suppose 'Gaboon' River is intended, that it is not to be expected there could be in the territory two distinct forms. The *L. n. laglaizi* is most doubtfully separable from L. NICTITANS.

LASIOPYGA STICTICEPS (Elliot).

Cercopithecus sticticeps Elliot, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 263.

Type locality. N'dongo-leti, on the Upper Oubangui River, Central Africa.

Genl. Char. Top of head and hind neck speckled, not uniform black.

Color. Band of rather stiff hairs standing upright over the eyes, black banded with white; top and sides of head, back and sides of neck, upper parts of body and flanks, speckled buff and black; a greenish tinge on arms, hands and feet; dorsal region jet black; chin and throat grayish white; under parts smoke gray, apical half banded with black and white; tail at base speckled buff and black like back, then for rest of basal half above, speckled black and white, beneath at base black faintly speckled with white, rest of basal half paler, more a brownish hue, apical half above and beneath jet black; large white spot on nose. Ex type British Museum.

Measurements. Total length, 1,345; tail, 830; foot, 125. No skull. Ex type British Museum.

A single specimen obtained by the Alexander-Goslin Expedition, is in the British Museum, and differs markedly from L. NICTITANS in having no plain black hairs on the head or neck, and in being speckled with buff and black instead of white and black, and in certain lights a greenish tinge is perceptible on the dorsal region. The sex is not known, as the leaders of the expedition did not make any notes of the sex of their specimens.

LASIOPYGA MARTINI (Waterhouse).

Cercopithecus martini Waterh., Proc. Zool. Soc. Lond., 1838, p. 58; 1841, p. 71; Reichenb., Vollständ. Naturg. Affen, 1862, p. 110; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit Mus., 1870, p. 21; Sclat., Proc. Zool. Soc. Lond., 1884, p. 176, pl. XIV; 1893, p. 245; Matschie, Sitzungsb. Gesell. Naturf. Freunde, Berlin, 1893, pp. 100, 215; Forbes, Handb. Primates, II, 1895, p. 47, (Part.); Pousarg., Ann. Scien. Nat. Paris, III, 7me Sér., 1896, pp. 199, 207; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 698, pl. XXXIX, fig. 5.

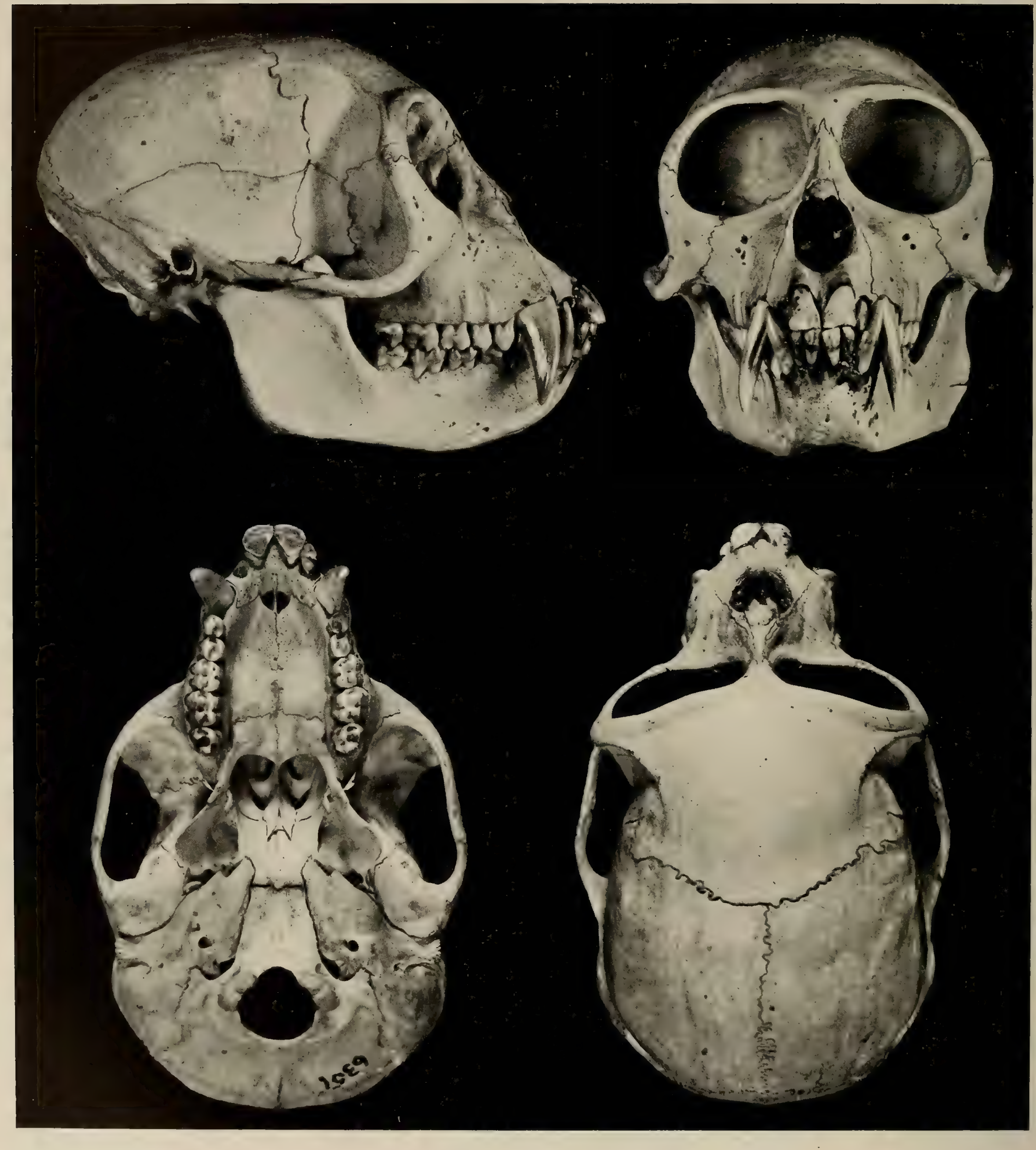
Cercopithecus ludio Gray, Proc. Zool. Soc. Lond., 1844, p. 8, pl. IX, fig. 2; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 51; Reichenb., Vollständ. Naturg. Affen, 1862, p. 105, fig. 255; Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 21; Sclat., Proc. Zool. Soc. Lond., 1893, p. 245; Forbes, Handb. Primates, II, 1894, p. 48.

Cercopithecus temmincki I. Geoff., Dict. Hist. Nat., III, 1845, p. 393.

Cercopithecus nictitans Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 89, (Part.).

Cercopithecus ascanias Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 87, (Part.).

Cercopithecus melanogenys Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 90, (nec Gray).



Lasiopyga cephus.

No. 6351 Acad. Nat. Sci. Phil. Coll. ⅘ Nat. Size.

Cercopithecus stampflii Jent., Notes Leyden Mus., X, 1888, p. 10; Sclat., Proc. Zool. Soc. Lond., 1893, p. 257; Matschie, Sitzungsb. Gesell. Naturf. Freunde, Berlin, 1893, pp. 101, 215; Forbes, Handb. Primates, II, 1894, p. 50.

MARTIN'S GUENON.

Type locality. "Fernando Po."

Geogr. Distr. Guinea from the delta of the Niger, Asabe, River Niger, (Rudkin); Liberia to Cameroon and Sette Cama, West Africa.

Genl. Char. Distinguished from L. NICTITANS by a whitish breast and inner side of arms.

Color. Hairs on forehead speckled black and yellow; crown of head speckled buff and black; nape and hind neck covered with jet black hairs, beneath which the hairs are speckled white and black, and this speckling continues to below shoulders; lower back and rump speckled buff and black; flanks grayer, hairs speckled white and black on apical half; outer side of arms to elbows, and whole of forearms, hands and feet, jet black; outer side of legs black speckled with white, the speckling growing less below the knee; chin, throat, upper part of chest and inner side of arms to elbows, and legs to knees white; rest of under parts pale gray; tail black speckled with white for four fifths its length, remainder jet black; large white spot on nose. Ex type British Museum.

Measurements. Total length, 1,080; tail, 420; foot, 115. No skull. Ex type British Museum.

Subgenus 4. Neocebus.

Tail red or mostly red; nose spot usually present.

A. Pale blue transverse stripe on upper lip.
a. Without rufous brow band.
a.' Tail coppery red, hairs on ears white ....*L. cephus.*
b.' Tail above like back, not red, hairs on ears yellowish ....*L. cephodes.*
b. With rufous brow band ....*L. inobservata.*
B. No blue stripe on upper lip.
a. Nose patch white ....*L. sclateri.*
b. Nose patch red ....*L. erythrotis.*

LASIOPYGA CEPHUS (Linnæus).

Simia cephus Linn., Syst. Nat., I, 1758, p. 27; I, 1766, p. 39; Bodd., Elench. Anim., 1784, p. 159.

Moustache (*Cercopithecus cephus*) F. Cuv., Hist. Nat. Mamm., I, 1821, pl. XIX, 2me ed., 1833, p. 54, pl. XVII.

Cercopithecus cephus Less., Spec. Mamm., 1840, p. 77; Mart., Mammif. Anim., 1841, p. 532; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 49; Dahlb., Stud. Zool. Fam. Reg. Anim. Nat., fasc. I, 1856, pp. 103, 107; Reichenb., Vollständ. Naturg. Affen, 1862, p. 105, figs. 252, 253; Gray, Proc. Zool. Soc. Lond., 1868, p. 182; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 20; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 91; Sclat., Proc. Zool. Soc. Lond., 1887, p. 502; 1893, p. 246; Forbes, Handb. Primates, II, 1894, p. 53; Pousarg., Ann. Scien. Nat. Paris, III, *7me* Sér., 1896, p. 140; Bates, Proc. Zool. Soc. Lond., 1905, p. 70; Elliot, Cat. Mamm. Field Columb. Mus., F. C. M. Pub., VIII, 1906, p. 569, Zool. Ser.; Pocock, Proc. Zool. Soc. Lond., 1907, pp. 722, 723, fig. 187, pl. XLI, fig. 3; Thos., Proc. Zool. Soc. Lond., 1911, p. 127.

MOUSTACHED GUENON. Native name *Osok.*

Type locality. "Guinea."

Geogr. Distr. Gaboon to the Congo, West Africa.

Genl. Char. Tail coppery red above and below; hairs on ears white.

Color. Face bluish slate gray; whitish blue stripe on upper lip extending outwards from beneath nostrils, beneath which is a line of black hairs forming a moustache, and merging with the black and yellow speckled hairs on lower part of cheek; black brow band extending on sides of head to ear, speckled in front with yellow hairs standing upright; crown of head speckled black and yellow; back of head, hind neck, entire upper parts of body, flanks and outer side of thighs speckled rich ochraceous rufous and black; outer side of arms black finely speckled with ochraceous rufous; cheeks yellow, hairs near ears ringed with black; hairs on lower parts of cheeks, above the black moustache, annulated with black and yellow; chin black; sides of throat reddish; beneath chin, center of throat, chest, entire under parts of body, and inner side of arms to elbows, and legs to near ankles gray; hands and feet black; tail above like back at base grading into coppery red, beneath gray at base becoming coppery red like upper part.

Measurements. Total length, 1,360; tail, 780; foot, 135; ear, 28, (Collector). Skull: total length, 113; occipito-nasal length, 93.5; intertemporal width, 45.5; Hensel, 80.3; zygomatic width, 78; median length of nasals, 18.7; width of braincase, 58.2; palatal length, 37.8; length of upper molar series, 25.8; length of upper canines, 19.2; length of mandible, 82.3; length of lower molar series, 33.2.

LASIOPYGA CEPHODES (Pocock).

Cercopithecus cephodes Pocock, Proc. Zool. Soc. Lond., 1907, p. 724.

Type locality. Gaboon. Type in British Museum.

Genl. Char. Basal portion of tail above like body, beneath grayish; hairs on ears yellowish.

Color. Resembles L. CEPHUS in general style of coloration, but differs in having the entire upper part of head black, speckled with yellow, and the ears covered heavily with yellowish white hairs; the hairs on upper part of cheeks paler, a uniform straw color; the speckling on upper parts paler and lighter, more of an orange shade; forearms with but little speckling above, and tail entirely different, being like back above at base, and gradually merging into brownish black at tip speckled with golden red, beneath gray on basal portion merging into a darkish cinnamon; nose white, the color extending upward to between the eyes; hands and feet black. Ex type British Museum.

Measurements. Total length, 1,110; tail, 640; foot, 120. Skull: total length, 90.5; occipito-nasal length, 77.5; intertemporal width, 40.2; Hensel, 56.5; zygomatic width, 59.1; width of braincase, 52.2; median length of nasals, 16.1; palatal length, 31.6; length of upper molar series, 23.1; length of upper canines, 15.6; length of mandible, 62.2; length of lower molar series, 29.2. Ex type British Museum.

While resembling L. CEPHUS in the general tone of the upper parts, this style can be readily distinguished by its black head and totally differently colored tail. The upper parts are brighter, more orange hued, and the yellowish white hair on the ears is very conspicuous, as is also the yellow hair on the cheeks. The status of this Monkey, however, as a form distinct from L. CEPHUS cannot as yet be regarded as satisfactorily established. The majority of specimens with tails colored like the type are thus far females, and CEPHUS may be as regards this member, dimorphic, at least in a restricted form, for while females mostly possess such tails, some adult males also have them. More specimens are required to show whether this peculiar coloration is restricted to a certain locality, or obtained generally wherever CEPHUS is found, in which case it would simply be dimorphic.

Lasiopyga inobservata (Elliot).

Cercopithecus inobservatus Elliot, Ann. Mag. Nat. Hist., V, 8th Ser., 1910, p. 81.

Type locality. West Africa, exact locality unknown. Type in British Museum.

Genl. Char. Allied to L. CEPHUS, but body very differently colored, and with a conspicuous rufous band on brow behind the yellow and black superciliary line. When the two species are placed side by side L. CEPHUS appears a reddish monkey, and L. INOBSERVATA a yellowish animal.

Color. A rufous colored brow band, having a superciliary line in front, and top of head behind yellowish, the hairs being banded with orange ochraceous and black, the tips being black, but the ochraceous bands give the dominant hue; remainder of head on top black, hairs tipped with yellow, entire rest of upper parts, shoulders and thighs ochraceous, much paler and less red than the same parts of L. CEPHUS, the hairs being pale gray at base and then banded with black and ochraceous and tipped with black. Black band from eye to ear; sides of face beneath, black and yellow; cheeks, and a broad line down sides of face black, hairs banded with yellowish white; hairs on lips and chin black; throat grayish white; entire under parts, inner side of arms to elbows, and legs to ankles, dark smoke gray, much darker than L. CEPHUS; forearms, hands and feet blackish, sparsely speckled with pale yellow; tail above with basal portion like back, then blackish maroon grading into pale bright red, beneath gray at base grading into pale red. Ex type British Museum.

Measurements. Total length, 1,330; tail, 750; foot, 145. Skull: total length, 119.6; occipito-nasal length, 90.7; intertemporal width, 40.9; breadth of braincase, 56.8; Hensel, 79; zygomatic width, 73.2; palatal length, 41.5; length of upper canines, 20; length of upper molar series, 25.5; length of mandible, 78.3; length of lower molar series, 32.2. Ex type British Museum.

In the description of this species the following comments were made:

"The skull when compared with the skull of a male L. CEPHUS of a corresponding age, is seen to have a considerably greater total length, longer and more protruding rostrum, and longer and broader braincase posteriorly. The orbits are quite a different shape, more circular than oblong, and the extreme width greater. The teeth are much larger, and the upper molar series longer by nearly the width of the first premolar; the palate is longer and wider, and the basioccipital much shorter and narrower. The difference in the size of this bone in the two skulls compared is remarkable.

"This is a rather extraordinary example. It has been in the British Museum for a long time, was obtained from Mr. Bartlett and is stated to have come from West Africa, no particular locality given. Besides the many differences in the coloring of the pelage between this specimen and examples of L. CEPHUS, the rufous brow band at once removes it from that species, and, seems to point to an affinity to L. NEGLECTA and L. BRAZZÆ the only other species possessing this peculiar mark, excepting the curious animal I have named L. INSOLITA. It is neither so broad as the brow bands of those species, and it is the only character these animals have in common, so far as their style of coloring is concerned. If there is any relationship between the present species and either of the two mentioned it would of course naturally be with L. BRAZZÆ, from the Congo, as L. NEGLECTA, the relative of L. BRAZZÆ, comes from the White Nile region."

LASIOPYGA SCLATERI (Pocock).

Cercopithecus sclateri Pocock, Proc. Zool. Soc. Lond., 1904, p. 433, fig. 87; 1907, p. 725.

SCLATER'S WHITE-NOSED GUENON.

Type locality. Benin, Nigeria, West Africa. Type in British Museum.

Genl. Char. Similar to L. ERYTHROTIS, but less red on the nose, ears and tail; no black superciliary band; occipital band present, hairs on nose and ears whitish; and the forearm grizzled.

Color. Space around eyes, end of nose and lips flesh color, rest of face black; white patch on nose tinged with red on upper part; whitish superciliary band tinged with red; cheeks yellow, hairs extending in a narrow line below and behind ears; black band from upper lip composed of long hairs turned upward, and reaching to a line on upper edge of orbit; black band from above each eye extending backward over ears, and covering most of occiput; top of head to superciliary line black, tips of hairs yellow; hind neck, upper back and shoulders, and outer side of arms to elbows, with the hairs sooty gray tipped with yellow; upper parts of body and flanks speckled red and black; outer side of forearms blackish speckled with yellow; outer side of legs from hips gray speckled with yellow; inner side of arms sooty gray; tail above on basal half, dark brown speckled with red, grading into paler brown to the black tips, beneath red on basal half, yellow for the remainder; hands black; feet brownish black, speckled with white. Ex type Collection Zoological Gardens, London. (Skin).

Measurements. Total length, 1,200; tail, 800; foot, 90. Skull: total length, 90; occipito-nasal length, 77.8; intertemporal width, 43.1; Hensel, 58.5; zygomatic width, 58.6; median length of nasals, 11.8; palatal length, 30; length of upper molar series, incomplete; length of mandible, 54.5; length of lower molar series, incomplete. An immature animal the last molar wanting. Ex type Zoological Gardens, London.

Lasiopyga erythrotis (Waterhouse).

Cercopithecus erythrotis Waterh., Proc. Zool. Soc. Lond., 1838, p. 59; Martin, Mammif. Anim., 1841, p. 535; Fraser, Zool. Typica, 1848, pl. IV; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 49; Reichenb., Vollständ. Naturg. Affen, 1862, p. 111, fig. 278; Gray, Proc. Zool. Soc. Lond., 1868, p. 182; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 21; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 70; Sclat., Proc. Zool. Soc. Lond., 1884, p. 176; 1893, p. 246; Forbes, Handb. Primates, II, 1894, p. 52; Pousarg., Ann. Scien. Nat., III, 7me Sér., 1896, p. 194; Thos., Proc. Zool. Soc. Lond., 1904, p. 186; Pocock, Proc. Zool. Soc. Lond., 1907, p. 725, pl. XLI, fig. 5.

RED-EARED GUENON.

Type locality. Island of Fernando Po. Type in British Museum.

Geogr. Distr. The Island of Fernando Po, (Waterhouse); Cameroon, (Matschie).

Color. Nose patch and ear fringe red; black brow band extending backward on sides of head to ears; cheeks yellowish white, overlaid by the straw tipped black hairs from the cheeks and side of nose; top of head, neck, and upper part of back black, finely speckled with yellowish white; rest of upper parts to tail black speckled with buff, becoming ochraceous buff on rump; flanks black speckled with white; outer side of arms and legs slate black, ticketed with white above elbows and knees; sides of neck, chin, and throat grayish white; chest and inner side of limbs pale gray; under parts of body dark gray; hands and feet black; tail above at base like back, merging into dark maroon speckled with coppery red, beneath coppery red. Ex type British Museum, the head missing.

Measurements. Total length, 1,030; tail, 578; foot, 92; ear, 33, (Collector). Skull: total length, 90.8; occipito-nasal length, 76.5; intertemporal width, 38.2; zygomatic width, 58.2; width of braincase, 50.3; median length of nasals, 13; palatal length, 29.3; length of upper molar series, 22.7; length of upper canines, 15; length of mandible, 28.2; length of lower molar series, 31.

The type is a flat skin without head or skull, so the measurements are taken from another example in the British Museum, as is also the description of the head.

Subgenus 5. Chlorocebus.

General color with a greenish tinge; color of hairs being a mingling of gray, black and tawny, or yellow.

KEY TO THE SPECIES AND SUBSPECIES.

- A. No rufous patch at root of tail beneath; end of tail not black.
  - *a.* White band across forehead.
    - *a.'* General hue tawny, black speckled........*L. matschie.*
    - *b.'* General hue paler, size smaller.............*L. hilgerti.*
    - *c.'* General hue tawny ochraceous, fur long, thick ....*L. djamdjamensis.*
    - *d.'* Whiskers buffy white.
      - *a."* General hue greenish yellow and black...*L. tantalus.*
      - *b."* General hue buff yellow and black.
        - *a.'"* Hands and feet brownish black. .*L. t. budgetti.*
        - *b.'"* Hands and feet gray, black and white speckled ....*L. t. griseisticta.*
    - *e.'* Whiskers all white ....*L. t. alexandri.*
  - *b.* No white brow band.
    - *a.'* Whiskers radiating from ear in semicircle.
      - *a."* Hairs gray at base ....*L. callitrichus.*
      - *b."* Hairs blackish brown at base ....*L. werneri.*
    - *b.'* Whiskers not radiating from ear in semicircle.
      - *a."* Whiskers not blending in color with top of head ....*L. griseoviridis.*
      - *b."* Whiskers blending in color with top of head ....*L. cynosura.*
- B. Rufous patch at root of tail beneath; end of tail black.
  - *a.* Upper parts speckled gray and cream color...*L. pygerythra.*
  - *b.* Upper parts reddish and ochraceous.........*L. rufoviridis.*

c. Upper parts tawny and black ....*L. rubella.*

d. Upper parts buff, yellow, or ochraceous and black.

  a.′ Chin black.

    a.″ Legs unspeckled.

      a.‴ Legs mixed gray and black.........*L. callida.*

      b.‴ Legs bluish gray, hairs tipped with white ....*L. centralis.*

    b.″ Legs speckled.

      a.‴ Under parts grayish white .....*L. c. whytei.*

      b.‴ Under parts buff ....*L. c. lutea.*

  b.′ Chin white ....*L. c. johnstoni.*

e. Upper parts speckled buff yellow and black.

  a.′ Legs gray speckled with cream color ....*L. silacea.*

  b.′ Legs yellow, unspeckled ....*L. nigriviridis.*

LASIOPYGA MATSCHIE (Neumann).

Cercopithecus matschie Neum., Sitzungsb. Ges. Naturf. Freund., Berlin, 1894, p. 15; 1902, p. 51; *Id.* Proc. Zool. Lond., II, 1902, p. 143; Pocock, Proc. Zool. Soc. Lond., 1907, p. 730.

MATSCHIE'S GUENON.

Type locality. Malo, Omo River, north of Lake Rudolf. Type in Berlin Museum.

Geogr. Distr. Dark forests of the Omo and Sobat rivers.

Genl. Char. Upper parts tawny instead of green.

Color. Top of head, neck and entire upper parts of body tawny, the hairs grayish at base then ringed with black and tawny; narrow line on forehead, sides of head, throat, entire under parts and inner side of limbs white; nose, lips and chin black; shoulders and upper part of thighs with the hairs ringed with black and ochraceous, paler than the back; hairs on forearms gray at base, then black and tips white; legs gray; hands and feet black; tail above black, hairs tipped with buff, beneath at base white. Ex type Berlin Museum.

Measurements. Total length, 1,260; tail, 590. Skull: occipito-nasal length, 93; Hensel, 76; intertemporal width, 42; zygomatic width, 70; median length of nasals, 22; length of upper molar series, 26; length of mandible, 75; length of lower molar series, 35. Ex type in Berlin Museum.

This is the only reddish back species in the green group of this genus. It dwells in dark forests which accounts for the intensity of its coloring.

LASIOPYGA HILGERTI (Neumann).

Cercopithecus hilgerti Neum., Sitzungsb. Ges. Naturf. Freund., Berlin, 1902, p. 50; *Id.* Proc. Zool. Soc. Lond., II, 1902, p. 143.

Cercopithecus ellenbecki Neum., Sitzungsb. Ges. Naturf. Freund., Berlin, 1902, p. 50.

Cercopithecus ellenbecki hilgerti Pocock, Proc. Zool. Soc. Lond., 1907, p. 730.

Type locality. Sources of the Schebeli River, Galla country, East Africa. Type in Berlin Museum.

Geogr. Distr. Galla country, East Africa.

Genl. Char. Smaller than L. MATSCHIE, and paler on upper parts.

Color. Nose and lips black; narrow line on forehead white; top of head, neck, and entire upper parts of body orange buff, the hairs being purplish gray at base then ringed with black and orange buff, the tips being the latter color and giving the dominant hue to the upper parts; arms and legs iron gray; chin brownish black; sides of head with the long hairs covering ears; sides of neck, throat, entire under parts, and inner side of limbs, white; hands and feet black; tail black, tips of hairs white. Ex type British Museum.

Measurements. Total length, 1,280; tail, 690. Skull: total length, 96; occipito-nasal length, 82; Hensel, 65; intertemporal width, 40; zygomatic width, 66; median length of nasals, 14; length of upper molar series, 22; length of mandible, 68; length of lower molar series, 27. Ex type Berlin Museum.

While having much similarity in color and markings to L. MATSCHIE, the present species is paler. It varies also, and some examples exhibit a considerable shade of yellow on the upper parts, but it never becomes as dark as L. MATSCHIE. The type of *L. ellenbecki* which is a young animal, has been examined and compared with specimens of L. HILGERTI in the Berlin Museum and found to agree with some of them in every particular. *L. ellenbecki* will therefore become a synonym of the present species.

Mr. Pocock (l. c.) makes this a subspecies of *ellenbecki,* but unfortunately he had no personal knowledge of the animal described by Neumann under that name.

LASIOPYGA DJAMDJAMENSIS (Neumann).

Cercopithecus djamdjamensis Neum., Sitzungsb. Ges. Naturf. Freund., Berlin, 1902, p. 51; *Id.* Proc. Zool. Soc. Lond., II, 1902, p. 143; Pocock, Proc. Zool. Soc. Lond., 1907, p. 730.

DJAMDJAM GUENON.

Type locality. Forests of Djamdjam, east of Lake Abaya, Abyssinia, East Africa. Altitude 10,000 to 12,000 feet. Type in Berlin Museum.

Geogr. Distr. Bamboo forests of Djamdjam, east of Lake Abaya, East Africa; range unknown.

Genl. Char. Fur very thick and long on neck almost forming a mane; tail short. Similar to L. MATSCHIE in color, but not so red.

Color. Top of head and entire upper parts of body, tawny ochraceous, the hairs being ringed with that color and black; white line on forehead barely perceptible; nose and face beneath eyes covered with short black hairs, with a narrow edging of white on lip; sides of head, and throat to chest white; chin blackish; arms brownish, black hairs tipped with white; thighs with dark brown hairs tipped with buff; legs pale gray; under parts and inner side of limbs white; hands and feet brownish black; tail blackish brown, hairs tipped with white. Ex type Berlin Museum.

Measurements. Total length, 900; tail, 490. No skull. Ex unique type in Berlin Museum.

The species is nearest to L. MATSCHIE, but differs in several important particulars; the back is more yellowish; the tail much darker and the legs grayer; but the hair is much longer and thicker on back than in any other species of the genus, especially about the shoulders, where it almost forms a mane. A single specimen was obtained by Herr Neumann at a high elevation.

LASIOPYGA TANTALUS (Ogilby).

Cercopithecus tantalus Ogilby, Proc. Zool. Soc. Lond., 1841, p. 33, pl. XVI; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 72, (syn. C. CALLITRICHUS); Sclat., Proc. Zool. Soc. Lond., 1893, p. 258; Matschie, Gesell. Naturf. Freunde, Berlin, 1893, p. 216; Forbes, Handb. Primates, II, 1894, p. 62; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 731, fig. 189.

Chlorocebus tantalus var. F. Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 26.

TANTALUS GUENON.

Type locality. Unknown. No type.

Geogr. Distr. Nigeria to Lake Chad; Lakoja, Dahomey, Upper Benné River, (Pocock).

Color. Face and chin black; hairs on cheeks and lips black, nose white; distinct white brow band, succeeded at bottom in front by a narrow black line, composed mainly of long stiff black hairs, projecting far outward and upward on the sides; black band from eyes separating whiskers from hairs of head; whiskers very long directed upward and backward hiding the ears, yellowish white, becoming more yellowish towards the end, the uppermost hairs speckled and tipped with black; top of head speckled with ochraceous, the hairs being black from the root; hind neck and upper parts, hairs gray banded on apical half with black and cream color, darkest on dorsal line and rump, where the color is cream buff; outer side of arms and legs, hands and feet gray speckled with black and white; entire under parts from chin to tail, and inner side of limbs grayish white; hairs around scrotum yellowish gray; scrotum slate blue; callosities pink; tail above speckled yellowish gray and black, becoming yellowish and black mixed, towards the end it is tufted, the hairs yellow tipped with black, beneath gray grading into yellowish on basal half and deepest on tuft; whiskers buff yellow.

Measurements. Total length, 1,295; tail, 730; foot, 135. Skull: total length, 111.8; occipito-nasal length, 91.2; intertemporal width, 42.3; Hensel, 76.2; zygomatic width, 73.1; breadth of braincase, 55.3; median length of nasals, 16.7; palatal length, 40; length of upper molar series, 24.7; length of mandible, 27.8; length of lower molar series, 33.6.

Ogilby's *Cercopithecus*, (LASIOPYGA), *tantalus* was obtained at "Liverpool, but its previous origin was unknown." His description shows he had a specimen of the green group of the present genus, and answers fairly well for the present species, yet, at the same time, it cannot be stated with certainty that it was the animal that has been called *L. tantalus* by Authors. However, as his name has been applied to this animal from Nigeria and accepted by writers, it seems better to continue this practice than to give a new name to the species, as causing less confusion probably than if that course were adopted.

LASIOPYGA TANTALUS BUDGETTI (Pocock).

Cercopithecus tantalus budgetti Pocock, Proc. Zool. Soc. Lond., 1907, p. 733.

Type locality. Bathyaba, east shore of Lake Albert, Uganda. Type in British Museum.

Genl. Char. Whiskers speckled and annulated; black hairs on hands and feet, and below elbows and knees speckled.

Color. White band on forehead divided in the middle by a bunch of black hairs, and with a narrow black line at bottom, the hairs of which at corners of eyes are long and turn upwards. Top of head covered with black hairs with ochraceous tips, these last giving the hue to this part; hind neck, upper back and shoulders, pale buff yellow and black; dorsal line from neck, expanding over upper parts from middle back to rump darker, speckled black and buff; flanks uniform pale buff yellow; upper side of arms and legs clear gray, speckled on upper arms and thighs with cream buff, and on forearms and legs below knees with white; face brownish black, eyelids whitish; lips, nose and chin covered with short jet black hairs; whiskers long, directed backwards and upwards covering ears, buffy white unspeckled; sides of neck, throat, inner side of arms and legs, and under parts of body yellowish white; anal region ochraceous rufous; hands brown and gray mixed; fingers brownish black to middle joint, then grayish to nails; feet speckled gray and brownish black; tail above speckled cream color and black for basal half, then buff and black for apical half, the buff growing darker when approaching the tip which is ochraceous buff, beneath at base buffy gray grading into buff, and then to ochraceous buff at tip; hairs on ears white. Ex type British Museum.

Measurements. Total length, 1,330; tail, 750; foot, 145. Skull: total length, 116.4; occipito-nasal length, 99.5; intertemporal width, 43.5; breadth of braincase, 57.5; Hensel, 81; zygomatic width, 76.4; median length of nasals, 20.6; palatal length, 42.9; length of upper molar series, 26.2; length of upper canines, 21.7; length of mandible, 82.7; length of lower molar series, 33.2. Ex type skull from skeleton, Museum Cambridge University, England.

The "black streak behind the corner of the orbit" mentioned by Pocock (l. c.) is not in reality a 'streak' in the usual acceptance of that term, but the long black hairs of the narrow line beneath the white band on the forehead turn backwards and upwards at the corner of the eyes and produce a black line. If these hairs should be shorter in any specimen, as they most likely would be in certain seasons or age, there would be no black mark at this point, as there are no black hairs growing upwards from the corner of the eyes to form a streak. I emphasize this point, because Mr. Pocock makes it one of his characters separating this race from L. TANTALUS, and might possibly mislead an investigator with a specimen having shorter brow hairs.

I am not aware that any intermediates between the two following forms and L. TANTALUS have been obtained, and it might be criticized that they should have been reduced to races, but they are all so intimately connected, that the differences they exhibit would seem to indicate, that, in the unexplored stretches of country lying between their present known habitats, such intermediates would eventually be procured.

LASIOPYGA TANTALUS GRISEISTICTA (Elliot).

Cercopithecus tantalus griseistictus Elliot, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 259.

Type locality. Bambara, Welle River.

Geogr. Distr. Mountains west of Lake Albert Edward to the Welle River. Type in British Museum.

Genl. Char. Like *L. t. budgetti* on upper parts, but hands and feet grizzled gray, fingers and toes silvery gray.

Color. Face and chin black, paler around eyes; nose, foreparts of cheeks, lips and chin covered with short black hairs; broad white brow band of stiff erect hairs, with a narrow line in front between eyes of black stiff hairs; some long stiff black hairs from corner of eye directed backward and lying between whiskers and hair of head; top of head, hairs black from root and tipped with ochraceous this being the dominant color on head; back of neck and upper back the hairs gray speckled with yellow and black; dorsal line and lower back and rump darker, speckled with black and buff; shoulders like upper back; outer side of arms and hands, legs and feet, gray speckled with black and white; the arms near shoulders, and thighs near hips, speckled with yellow and black; whiskers very long extending beyond and hiding the ears, yellowish white, some of the upper hairs banded with black on apical part; sides of neck, throat, entire under parts of body and inner side of limbs grayish white; rufous hair about scrotum; flanks paler than upper parts; hairs speckled with yellow and black; tail above, speckled yellow and black for half the length, rest broccoli brown, beneath with a tuft of white hairs on each side at root, gray for a third of the length, remainder broccoli brown. No tuft. Iris brown. Ex type British Museum.

Measurements. Total length, 1,200; tail, 720; foot, 135. Skull: total length, 113.2; occipito-nasal length, 95.5; intertemporal width, 44.7; Hensel, 40.5; zygomatic width, 77.5; breadth of braincase, 56.4; median length of nasals, 21.2; palatal length, 40.3; length of upper molar series, 27.8; length of upper canines, 21.3; length of mandible, 82.1; length of lower molar series, 34.6. Ex type British Museum.

This race resembles *L. t. budgetti* in the coloring of the upper parts, but differs in having the gray hands and feet of L. TANTALUS, and the tail has no tuft like that of *L. t. budgetti.* From L. TANTALUS it differs in cranial characters; when two old male skulls are compared, that of the present race is seen to be much larger in every way; wider orbits and braincase, but narrower rostrum; intertemporal width greater; nasals much longer; zygomatic width greater; palate longer; tooth rows of both jaws longer by the width of first premolar; and bullæ very much longer and more elevated. In fact the cranial characters are so different it is hardly worth while to compare the skulls. The upper parts like those of *L. t. budgetti* are much darker than L. TANTALUS.

The unique type in the British Museum, an old male, was procured by Mr. Boyd Alexander at Bambara on the Welle River, Central Africa.

A specimen in the Berlin Museum from the mountains west of Lake Albert Edward agrees with the type above described.

LASIOPYGA TANTALUS ALEXANDRI (Pocock).

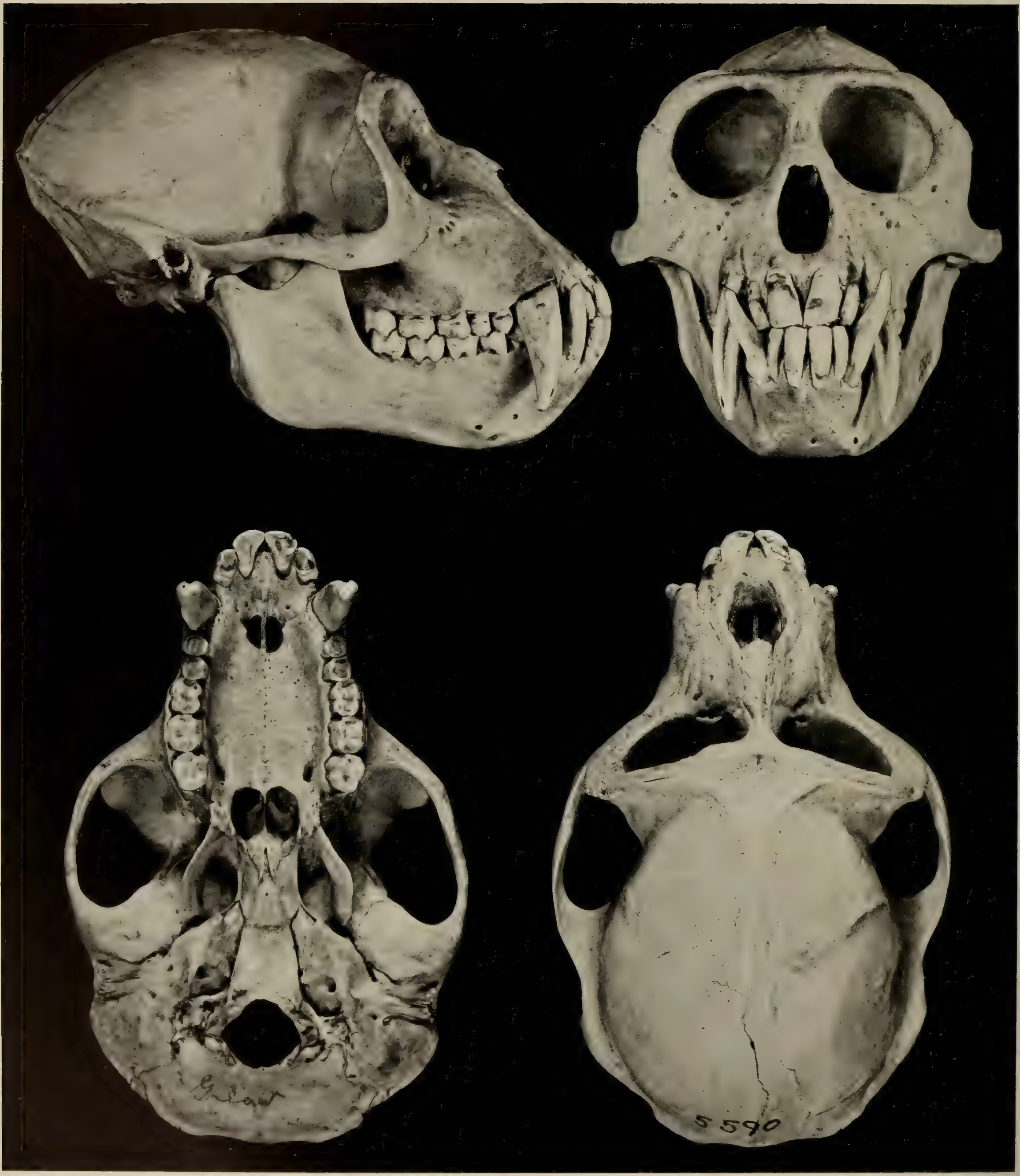
Cercopithecus tantalus alexandri Pocock, Proc. Zool. Soc. Lond., 1909, p. 545.

Type locality. Lake Chad, Central Africa. Type in British Museum.

Genl. Char. Whiskers very long, almost wholly white.

Color. Face and chin covered with short black hairs; superciliary stripe black with numerous long, stiff, erect hairs; succeeded by a band of white across the width of forehead, turning upward at corners of eyes and passing on to sides of head, but not meeting on occiput; rest of head, hind neck, shoulders and upper parts of body speckled black and yellow, giving a greenish tinge over the whole upper parts; flanks gray, hairs barred with yellow and black; arms and hands gray, hairs tipped with white; outer side of thighs gray, hairs buff barred with black and yellow, grading into pure gray on legs below knees, the hairs white tipped; whiskers very long, and with the sides of neck, throat and upper part of chest white; rest of under parts of body and inner side of limbs grayish white; tail above grizzled black and white, sides and beneath white. Ex type Zoological Gardens, London.

Measurements. Total length, 1,130; tail, 590; foot, 90. Skull: total length, 102.5; occipito-nasal length, 88.5; intertemporal width, 45.3; Hensel, 67.5; zygomatic width, 65.7; median length of nasals, 16.7; palatal length, 35.9; length of mandible, 71; length of upper molar series, 25.5; length of lower molar series, 31.2.. Ex type Zoological Gardens, London.



LASIOPYGA CALLITRICHUS.

No. 5590 Acad. Nat. Sci. Phil. Coll. ⅘ Nat. Size.

Lasiopyga callitrichus (I. Geoffroy).

Simia sabæus (nec Linn., sed Auct.).

Le Callitriche F. Cuv., Hist. Nat. Mamm., Livr. IV, 1819, pl. XX.

Cercopithecus callitrichus I. Geoffroy, Cat. Primates, 1851, p. 23; Dahlb., Stud. Zool. Fam. Reg. Natur., fasc. I, 1856, pp. 104-108, var. b; Reichenb., Vollständ. Naturg. Affen, 1862, p. 115, fig. 288; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 73; Sclat., Proc. Zool. Soc. Lond., 1893, p. 248; Forbes, Handb. Primates, II, 1894, p. 58.

Cercopithecus sabæus (nec Linn.), Pousarg., Ann. Scien., I, 1896, 7me Sér., p. 224; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 726, pl. XLII, fig. 1.

GREEN GUENON.

Type locality. Unknown. Type in Paris Museum?

Geogr. Distr. Senegambia to the Niger, Yabanda, Congo, (Dybowski); West Africa. Island of St. Kitts, West Indies. (Introduced). Specimen in Paris Museum.

Genl. Char. No white brow band; hairs on cheeks radiating from a point.

Color. Face and ears black; top of head, upper parts of body, flanks, and limbs to elbows and knees yellowish green, the hairs gray at base and ringed with black and yellow; forearms and legs from knees gray, hairs ringed with white, or yellowish white and black; cheeks, sides of neck in front of ears, chin, throat, under parts and inner side of limbs white; hands and feet blackish gray; tail grayish green for two thirds the length, the hairs brownish black ringed with yellow and tipped with yellowish, remainder yellow.

From Geoffroy's supposed type of L. CALLITRICHUS in Paris Museum.

Measurements. Total length, 1,308.1; tail, 762; foot, 152.4. Skull: total length, 117; occipito-nasal length, 92; Hensel, 88; zygomatic width, 79; intertemporal width, 42; palatal length, 52; breadth of braincase, 54; median length of nasals, 17; length of upper molar series, 29; length of mandible, 80; length of lower molar series, 37.

There is a specimen in the Paris Museum collected by Dybowski, at Yabanda, on the Congo, which differs from the typical L. CALLITRICHUS by having the top of head, upper parts of body, flanks and limbs to elbows and knees greenish gray, with a yellow tinge instead of yellowish green, and the hands and feet are brownish gray instead of blackish gray. If this is a slightly varied example of L. CALLITRICHUS, its range to the southward must be considerably extended.

Simia sabæa Linnæus is a composite species, its Author, as was not infrequently the case in his diagnosis, confounding two species together. The *cauda cinerea* removes it at once from *Le Callitriche* F. Cuv., with its grayish green tail and yellow tip, and in the longer description, *Le callitriche* and *Le Grivet* (L. GRISEOVIRIDIS Desm.), seem to be mixed up together. Under these circumstances it does not appear to be judicious to employ Linnæus' name, for it might not only continue but increase the confusion already created, and another name should be substituted for it, and the one available is *callitrichus* I. Geoffroy (l. c.).

This is one of the most common monkeys seen in captivity, and has been introduced into one or more of the West Indian Islands, and also, according to Schlegel, into St. Iago of the Cape Verde Islands.

LASIOPYGA WERNERI (I. Geoffroy).

Cercopithecus werneri I. Geoff., Compt. Rend., XXXI, 1850, p. 874; *Id.* Archiv. Mus. Hist. Nat. Paris, V, 1851, p. 539, pl. XXVII; Wagn., Schreb., Säugth. Suppl., 1855, p. 42; Reichenb., Vollständ. Naturg. Affen, 1862, p. 113, fig. 280; Sclat., Proc. Zool. Soc. Lond., 1893, p. 258; Matschie, Sitzungsb. Gesell. Naturf. Freunde, Berlin, 1893, p. 216; Forbes, Handb. Primates, II, 1894, p. 58.

WERNER'S GUENON.

Type locality. Unknown. "Un des types" in Paris Museum, purchased, when living, for the menagerie in the Jardin des Plantes.

Geogr. Distr. Unknown.

Genl. Char. Very like L. CALLITRICHUS in general, but the hairs on back are blackish brown at base instead of gray.

Color. A narrow white line above eyes; top of head, upper parts and sides of body, limbs to knees and elbows yellowish green inclined to blackish on lower back and rump, the hairs dark brown at base and ringed with black and yellow; forearms and legs from knees gray; hands and feet blackish gray; sides of face and whiskers, chin, and throat white; under parts and inner side of limbs grayish white; tail dark gray above, white beneath, apical portion yellow (tuft). Ex specimen marked "un des types" in Paris Museum, and which died in the Menagerie. The actual type cannot be found, or if it is in the collection it has no distinguishing mark. The skull is in the specimen.

Measurements. Total length, 1,143; tail, 584.20; foot, 139.7. Ex Paris Museum specimen labelled *L. werneri,* "un des types," but not the type of L. WERNERI I. Geoffroy.

The above describes the species called WERNERI by I. Geoffroy as represented in the Paris Museum at the present time. Unfortunately it does not agree with the colored figure in the Archives which has the hands and feet of the same hue as the limbs, while the Museum example has these blackish gray, quite a different color. The top of the head is also quite different from that shown in the figure, but regarding this Geoffroy states, a second specimen of WERNERI (which may be the one in the Museum), was in this respect, not like the type, "ne l'a jamais presentée." The Museum specimen differs from *L. callitrichus* in having the hairs on the back brownish black at the base instead of gray, and in this respect is more like *L. werneri.* Geoffroy's description is as follows: "Les parties supérieures de la tête et du corps sont, dans cette espèce, couvertes de poils gris a leur racine, noirâtres dans le reste de leur première moitié, noirs a leur extremité, et intermédiarement d'un fauve-jaune assez vif tirant un peu sur l'olivâtre; d'ou résulte une teinte générale d'un fauve-roux tantot tiqueté de noir, tantot plutôt varié de noir que tiqueté, par ce que la zone foncée terminale est assez étendue pour donner par places une teinte noir tres marquée. La face supérieure de la queue presente, a la base de cet appendice, la même couleur que le dessus du corps, mais presque aussitôt la zone jaune des poils diminuant, la zone noire augmentant proportionellement, la queue devient noirâtre. Vers les deux cinquièmes de la queue la jaune redevient au contraire prédominant, et l'extremité tout entière de la queue, aussi bien qu'une grande partie de sa face inférieure, est d'un jaune ou d'un roux doré assez vif."

"La face extérieure des membres, sauf les épaules et les cuisses, est d'un gris un peu olivâtre et très tiqueté, de même que les mains.

"Les parties inférieures du corps, et internes des membres sont au contraire blanches, de même que la gorge; les joues, garnies de longs poils dirigés en haut, sont d'un jaunâtre clair. Entre les organes genitaux et l'anus, il existe assez longs poils roux. Il n'y a point, au contraire, de poils de cette couleur a la base de la queue, comme dans plusieurs autres Cercopithèques plus ou moins voisins de l'espèce que je viens de décrire.

"La face est noire; entre elle et les poils roux de la tête existe une ligne de longs poils noirs, et au-dessus un petit bandeau blanc."

It will be readily seen from the above description that Geoffroy's *werneri* does not agree with L. CALLITRICHUS (I. Geoff.), *L. sabæa* (Auct. nec Linn.), nor with the "type" specimen in the Museum, and unless his real type was an extreme example, or his description was taken from more than one specimen, of which there is no proof, it would seem best to permit the name WERNERI to stand, until, happily, the proper status of the supposed species can be established. Certainly I have not seen an example which would altogether answer to the description and figure of L. WERNERI Geoff.

LASIOPYGA GRISEOVIRIDIS (Desmarest).

Le grivet F. Cuvier, Hist. Nat. Mamm., Livr. VII, 1819, p. 38, pl. XXXIX.

Cercopithecus griseoviridis Desm., Mamm., 1820, p. 61; E. Geoff., Cours Hist. Nat. Mamm., 1828, p. 19, 8me Leçon; Rüpp., Neue Wirbelth. Säugth., 1835, p. 8; Reichenb., Vollständ. Naturg. Affen, 1862, p. 115, figs. 191, 289; Blanf., Zool. Abyssin., 1870, p. 224; Heugl., Reise Nord. Afr., II, 1877, p. 5; Sclat., Proc. Zool. Soc. Lond., 1893, p. 249; Anders., Zool. Egypt., Mamm., 1902, p. 19.

Cercopithecus sabæus (nec Linn.), E. Geoff., Cours Hist. Nat. Mamm., 1828, p. 18, 8me Leçon; I. Geoff., Compt. Rend., XXI, 1850, p. 874; *Id.* Cat. Primates, 1851, p. 22; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 74; Anders., Cat. Mamm. Ind. Mus. Calc., 1881, p. 56.

Cercopithecus griseus Less., Spec. Mamm., 1840, p. 81.

Chlorocebus engythithea Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 26.

Cercopithecus æthiops (nec Linn.), Anders., Zool. Egypt., Mamm., 1902, p. 13; Pocock, Proc. Zool. Soc. Lond., 1907, p. 728, fig. 188, pl. XLII, fig. II.

THE GRIVET.

Type locality. "Egypt."

Geogr. Distr. Sennaar and Mt. Renk, Soudan, (R. Hawkes); Gor Abu Guma, White Nile, Abyssinia; Kordofan to an elevation of 4,000 feet.

Color. Narrow white line on forehead joining the long white hairs on sides of face; top of head pale buff yellow, the hairs being black ringed with buff; rump dark gray, hairs ringed with white; outer side of arms and legs dark gray, hairs annulated with whitish; sides of head, neck, chin, throat, entire under parts, and inner side of limbs yellowish white; tail above grayish brown, hairs ringed white, beneath white, tip white; hands and feet dark maroon.

Measurements. Skin. Total length, 1,160; tail, 620. The above description was taken from a specimen in the Berlin Museum, obtained at Gor Abu Guma on the White Nile.

The *Simia æthiops* Linn., has been a stumbling block, as it were, to Mammalogists always, and by most writers has been considered to belong to the genus CERCOCEBUS, and has usually been bestowed upon the species named by Buffon, "Mangabey à collier blanc," Latinized by Gray as *Cercocebus collaris.* Mr. de Winton in Anderson's Zoology of Egypt, decided that all previous determinations were wrong, that Linnæus' species was a *Lasiopyga* and gave the name of *æthiops* Linn., to the species afterwards named by Desmarest (L.) GRISEOVIRIDIS. In deciding that the *Simia æthiops* Linn., was a LASIOPYGA and not a CERCOCEBUS Mr. de Winton may possibly be right, but there is more than a considerable doubt that the species was the GRISEOVIRIDIS of Desmarest, for I am not prepared to follow Mr. de Winton when he says that, "every word" of Linnæus' description "agrees perfectly with the Monkey under notice," L. GRISEOVIRIDIS (Desm.), for we find the unanswerable statement to the contrary, when in his diagnosis Linnæus gives *"cauda tecta, subtus ferrugineus,"* which certainly does not agree with that member of L. GRISEOVIRIDIS (Desm.), which has no red anywhere on the tail above or beneath. It is most probable as in many other instances Linnæus never saw the animal he named *æthiops,* and he merely copied Hasselquist's description in an abbreviated form, and knew nothing of the animal itself. Hasselquist says he saw the animal alive brought into Æthiopia, (Egypt), by the negroes, but what the species was it is impossible now to determine, for there is no species of LASIOPYGA with any red on the under parts of its tail, to be found near enough to have probably been brought by natives to Cairo 150 years ago. The nearest known to-day are members of the PYGERYTHRA style in Uganda and farther south. The species found in the Soudan is L. GRISEOVIRIDIS and it would be natural to suppose that natives might carry individuals of that form down the Nile to Cairo, but unfortunately it does not agree with either Hasselquist's or Linnæus' descriptions, and as there is no known species that does, the wisest course is to reject *æthiops* Linn., as undeterminable, and thus save all future Mammalogists, from the vain attempt to solve a problem that is now beyond human effort, and from the use of a name that can only produce confusion and futile argument.

LASIOPYGA CYNOSURA (Scopoli).

Simia cynosurus Scop., Delic. Faun. Flor. Insubr., I, 1786, p. 44, pl. XIX.

Malbrouck F. Cuv., Hist. Nat. Mamm., Livr. IIme, 1819, pl.

Cercopithecus cynosurus Desm., Mamm., 1820, p. 60; Less., Spec. Mamm., 1840, p. 81; Martin, Mammif. Anim., 1841, p. 515; I. Geoff., Dict. Hist. Nat., III, 1849, p. 306; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 38; Dahlb., Stud. Zool. Fam. Reg. Anim. Nat., fasc. I, 1856, pp. 105-109; Reichenb., Vollständ. Naturg. Affen, 1862, p. 119, figs. 295, 301; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 72; Sclat., Proc. Zool. Soc. Lond., 1893, p. 247; Forbes, Handb. Primates, II, 1894, p. 55; Pousarg., Ann. Scien. Nat., III, 1896, p. 223; Pocock, Proc. Zool Soc. Lond., 1907, p. 734, fig. 190, pl. XLII, fig. 3.

Cercopithecus tephrops Bennett, Proc. Zool. Soc. Lond., 1833, p. 109; Reichenb., Vollständ. Naturg. Affen, 1862, p. 120, figs. 296-300.

Chlorocebus cynosurus Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 26.

MALBROUCK GUENON.

Type locality. Unknown.

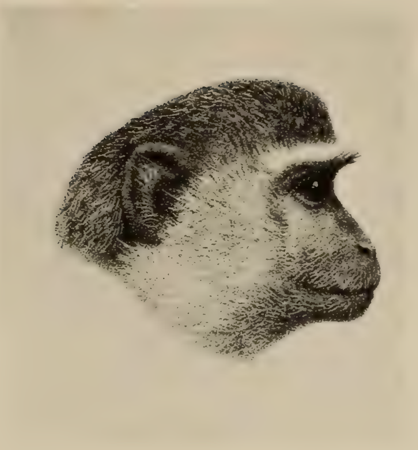
Geogr. Distr. Congo, Cahama, Mossamedes, on the Kakulovar, tributary of the Cunene; Brazzaville (Pousargues); West Africa.

Color. Face pallid and blotched with black; short white hairs on lips and chin; whitish brow band and whiskers, the latter short not covering the ears; sides of throat and neck in front of ears white; superciliary line of stiff black, erect hairs; head above, back of neck, shoulders and upper part of body speckled yellow and black, the yellow predominating; outer side of limbs, hands and feet gray, hairs white tipped; chin, throat, chest, under side of body and inner side of limbs grayish white; tail above speckled black and gray, beneath grayish white; scrotum slate blue; no rufous hairs at root of tail beneath.

Measurements. Total length, 915; tail, 435; foot, 130, (skin). Skull: total length, 116.5; occipito-nasal length, 95.5; intertemporal width, 43.8; width of braincase, 58.4; Hensel, 83.9; zygomatic width, 76.2; median length of nasals, 18.4; palatal length, 45.1; length of upper canines, 21.9; length of upper molar series, 28.7; length of mandible, 81.5; length of lower molar series, 36.

LASIOPYGA PYGERYTHRA (F. Cuvier).

Cercopithecus pygerythrus F. Cuv., Hist. Nat. Mamm., 1821, pl. CXXXIX, Livr. XXIV, p. 2, "Le Vervet"; Desm., Mamm., Suppl., 1820, p. 524; E. Geoff., Cours Hist. Nat. Mamm., 1828, p. 19, 8me Leçon; Less., Spec. Mamm., 1840, p. 83; Martin, Mammif. Anim., 1841, p. 52; I. Geoff., Archiv.



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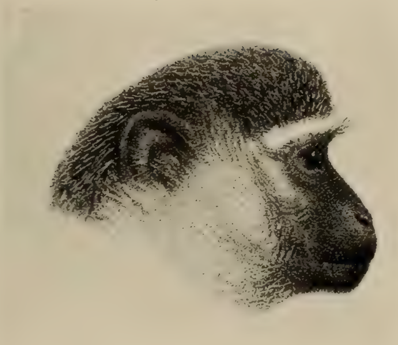

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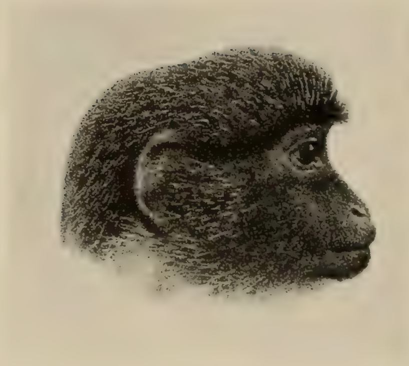

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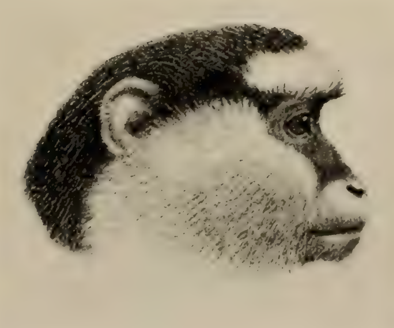

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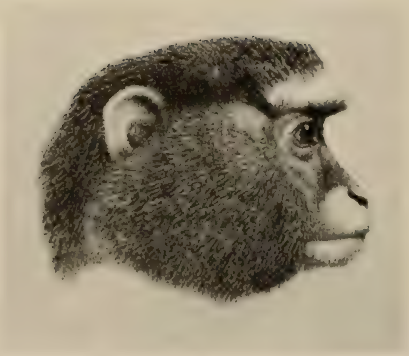
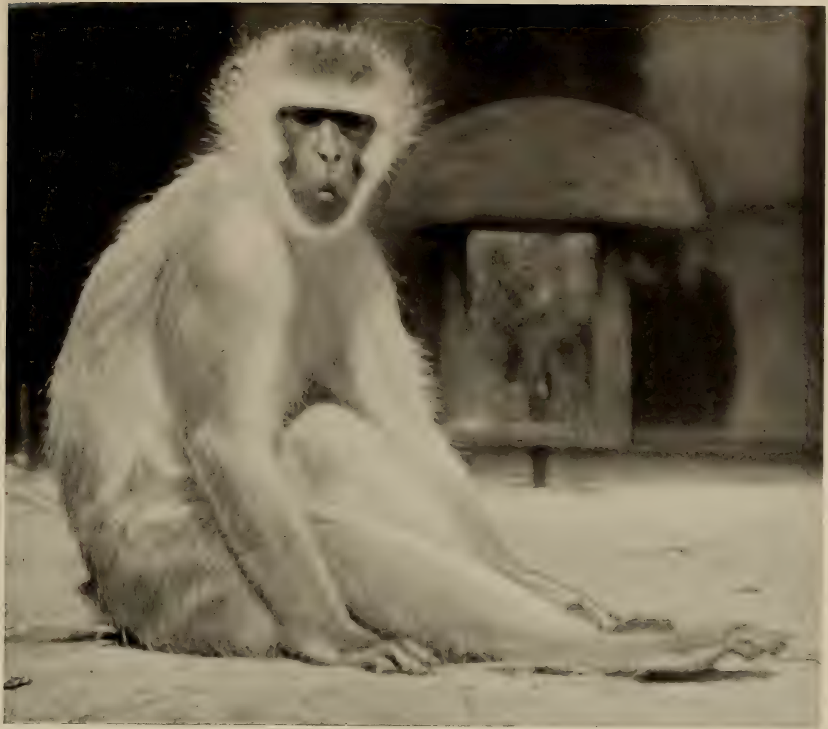
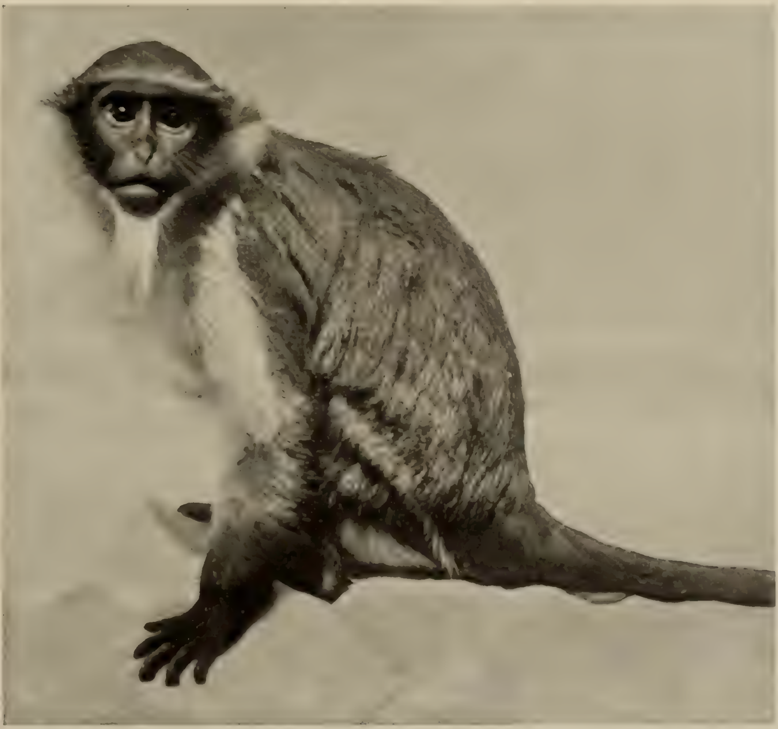


5.

1. LASIOPYGA CYNOSURA.
2. LASIOPYGA PYGERYTHRA.
3. LASIOPYGA NIGROVIRIDIS.
4. LASIOPYGA CAMPBELLI.
5. LASIOPYGA BURNETTI.



Lasiopyga pygerythrus.



Lasiopyga roloway.

Mus. Hist. Nat., Paris, II, 1843, p. 563; *Id.* Dict. Hist. Nat., III, 1849, p. 305; *Id.* Cat. Primates, 1851, p. 21; Peters, Reis. Mossamb., Säugth., 1852-82, p. 4; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 39; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 104, 108; Pucher., Rev. Zool., 1857, p. 197; Reichenb., Vollständ. Naturg. Affen, 1862, p. 118, figs. 292-294; Kirk, Proc. Zool. Soc. Lond., 1864, p. 649; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 76; Anders., Cat. Mamm. Ind. Mus. Calc., 1881, p. 55; Thos., Proc. Zool. Soc. Lond., 1885, p. 219; Johnst., Kilimanj. Exped., 1886, p. 352; Sclat., Proc. Zool. Soc. Lond., 1893, p. 249; Forbes, Handb. Primates, II, 1894, p. 60; Thos. and Schwann., Proc. Zool. Soc. Lond., 1905, p. 255; 1906, p. 160; Pocock, Proc. Zool. Soc. Lond., II, 1907, pp. 735, 736, fig. 191, pl. XLII, fig. 4; Cabrera, Ann. Mag. Nat. Hist., VI, 1910, 8th Ser., p. 619.

Cercopithecus pusillus Desm., Dict. Class. Hist. Nat., VII, 1825, p. 568; Cabrera, Ann. Mag. Natur. Hist., VI, 1910, 8th Ser., p. 619.

Cercopithecus erythropyga G. Cuv., Règn. Anim., 1829, p. 92.

Cercopithecus lalandi I. Geoff., Compt. Rend., XV, 1842, p. 1038; *Id.* Archiv. Mus. Hist. Nat., Paris, II, 1843, p. 561; *Id.* Dict. Hist. Nat., III, 1849, p. 305; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 39; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 103, 108; Reichenb., Vollständ. Naturg. Affen, 1862, p. 114, fig. 283; Sclat., Proc. Zool. Soc. Lond., 1893, pp. 248, 615; Thos. and Schwann, Proc. Zool. Soc. Lond., 1906, p. 778; Pocock, Proc. Zool. Soc. Lond., 1907, p. 735; Thos. and Wrought., Proc. Zool. Soc. Lond., 1907, p. 776.

Chlorocebus pygerythrus Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 25.

VERVET GUENON. Native name *Pusi, Nkau,* Zulu.

Type locality. Unknown. Type in Paris Museum.

Geogr. Distr. Southern and eastern Africa, from Cape Colony, through the coast of Natal and Zambesia to Mombassa and Mount Kilimanjaro. Legogot, eastern Transvaal, (Grant), Brit. Mus. spec.; Knysna, Cape Colony, (Grant); Hluhluwe Stream, Zululand, (Grant); Umfalosi Station, Zululand (Grant); Cogumo, Inhambane District, Portuguese East Africa (Grant); Legago, Bubaton District, (Grant); Bena Port, E. Afr., (Grant).

Color. A white line across forehead in front of which is a narrow black line with numerous long black hairs; whiskers and sides of head white; top of head, upper part of body to rump, shoulders and flanks, ochraceous on some examples, yellowish green in others, the hairs being dark brown at base and ringed with ochraceous and black, or yellow and black; rump and limbs dark gray tipped with black; entire under parts, and inner side of limbs white; hands brownish black, feet reddish; tail iron gray, ochraceous rufous on sides at root, apical portion black. Skull in the specimen. Ex type Paris Museum.

The specimen figured by F. Cuvier is now in the Paris Museum and has lost a portion of the blackish end of the tail. It is yellowish green in color on the upper parts of the body and in this respect differs from a more recent specimen in the Museum brought from the French Congo in 1902. The difference of tint shown by these examples is probably only an individual variation of hue, for Cuvier's specimen does not seem to be faded to any perceptible degree on the upper parts. The gray portions on the body of the Congo specimen as well as the tail are much darker than on the other. The form described under the name of *L. lalandi* Geoff., is all dark gray above with a slight wash of olive. The type is not in the Paris Museum, nor any specimen even marked "un des types," and it cannot be determined whether the examples in the collection are those which Geoffroy had in his possession or not, but it is presumable that they are. Grant states that this species is "common in the Dukudukuthorn forest, eight miles south of the station, Hlatwa District, Zululand.

"Generally seen in parties from six to twelve. In the early morning they sit on the tops of the trees and ant-heaps enjoying the sun. The natives living in the bush eat the 'Nkau,' while those of the open country will not touch it." In Knysna, Cape Colony, the same collector says this monkey is "common, frequents the forest country, and visits the land and gardens near houses doing considerable damage. Generally in parties of six or more, although occasionally I have observed a pair with their young only."

There is considerable variation in the shades of color from light to dark among individuals, and this is well exemplified in the series in the British Museum procured by Mr. C. H. B. Grant, from various localities. As these differences in intensity of color occur among examples from the same place, it can only be regarded as individual variation, and one of no importance in a scientific sense, and it is observable in quite young specimens as well as in those fully adult. As will be noticed from the localities given above, the species has quite an extensive distribution in the southern part of the continent. Dr. Cabrera (l. c.) has endeavored to separate De Lalande's animal from Cuvier's species under the name of *Cercopithecus pusillus* Desmoulins, on the ground that L. PYGERYTHRA is a green animal and *L. pusillus* a gray one. It is quite evident that Dr. Cabrera is not aware of the great variability in shades of color that examples of L. PYGERYTHRA exhibit, even, as I have already stated, from the same locality. I have examined many specimens of this species from numerous localities in southern Africa, and have been quite unable to find any line of demarcation among them by which more than one form could be recognized. We know what the L. PYGERYTHRA Cuvier is, for the type is in the Paris Museum, but we only know Desmoulins' and E. Geoffroy's species by their descriptions, the types having disappeared. The specimens named *"lalandi"* in the Paris Museum, and which we have every reason to suppose were those recognized by the earlier French writers as representing, at least, the animal described as *L. pusillus* and *L. lalandi,* cannot be separated from Cuvier's species. It would seem then to be most unwise to attempt to recognize two species of this Guenon, for the evidence at present available is against it. If the Paris specimens marked *lalandi* are really that form then certainly they may not be separated from Cuvier's species. Unfortunately we cannot be absolutely sure that this is so and never will be, for De Lalande's type has disappeared, but we are sure of L. PYGERYTHRA, and as examples of this species exhibit a varied coloring, and the different hues are not confined to examples from any especial locality or range, any attempt to separate them into two distinct forms would result only in increased confusion. My investigation of these specimens does not permit me to accept Dr. Cabrera's conclusions.

LASIOPYGA RUFOVIRIDIS (I. Geoffroy).

Cercopithecus rufoviridis I. Geoff., Archiv. Mus. Hist. Nat., Paris, II, 1841, p. 504, pl. XXXII; *Id.* Compt. Rend., XV, 1842, p. 1038; *Id.* Cat. Primates, 1851, p. 23; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 104, 108; Sclat., Proc. Zool. Soc. Lond., 1860, p. 420; 1893, p. 258; Reichenb., Vollständ. Naturg. Affen, 1862, p. 113, fig. 281; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 78; Forbes, Handb. Primates, II, 1894, p. 65; Matschie, Sitzungsb. Ges. Naturf. Freunde, Berlin, 1895, p. 216; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 737.

Cercopithecus flavidus Peters, Reis. Mossamb., Säugth., 1852, p.

3, pl. I b; Reichenb., Vollständ. Naturg. Affen, 1862, p. 121, fig. 303; Sclat., Proc. Zool. Soc. Lond., 1893, p. 256; Matschie, Sitzungsb. Gesell. Naturf. Freunde, Berlin, 1893, p. 213, juv.

Chlorocebus rufoviridis Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 25.

Cercopithecus pygerythrus rufoviridis Thos. and Wrought., Proc. Zool. Soc. Lond., 1908, pp. 165, 537.

REDDISH-GREEN GUENON.

Type locality. Unknown. No type in Paris Museum.

Geogr. Distr. Mozambique; Pungwe River District, (Grant); Tete, Zambesi, (Grant); East Africa.

Color. Rather broad white band across forehead; top of head dark brown, speckled with ochraceous; upper part of body reddish speckled with ochraceous; flanks pale reddish unspeckled; limbs pale gray; hands blackish brown; feet yellowish gray and brown mixed; sides of head and throat, entire under parts and inner side of limbs yellowish white; tail dark gray above, black at tip, beneath red at base, rest white. Type not found. Ex specimen in Paris Museum from Bagamogo.

Measurements. Total length, 1,212.8; tail, 679.4; foot, 127. Skull: total length, 100; occipito-nasal length, 86; Hensel, 70; zygomatic width, 67; intertemporal width, 42; breadth of braincase, 56; palatal length, 41; median length of nasals, 18; length of upper molar series, 25; length of mandible, 70; length of lower molar series, 31.

Grant, who met with this species in the Pungwe River District, states while not so common as *L. a. beirensis,* it was "very plentiful and often observed in large troops. When the native crops are ripe, they visit the lands and do considerable damage." At Tete only two troops were seen and they were exceedingly wild. Generally frequenting the trees along the river banks, and observed drinking in the middle of the afternoon.

LASIOPYGA RUBELLA (Elliot).

Cercopithecus rubellus Elliot, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 260.

Type locality. Fort Hall, forest around Mt. Kenia, British East Africa, (Hinde). Type in British Museum.

Genl. Char. General color reddish; no white on under parts.

Color. Brow buffy white, black on lower edge; face brownish black; hairs on upper lip to below eyes and chin black; top and back of head speckled black and ochraceous, latter color most prominent; entire rest of upper parts of body tawny, with rather indistinct black speckling, tawny being the prevailing hue; flanks paler, a rather bright ochraceous of uniform hue, no annulations; arms on outer side above elbow mixed gray and cream buff, forearms pale gray with black annulations; outer side of legs gray, with tawny hairs mixed near hips and with black annulations; sides of head and whiskers, (which are directed backwards covering ears), throat, inner side of arms and legs pinkish buff; abdomen and anal region cream buff; tail above tawny and black like back, growing darker and merging into black on apical portion; beneath, a rufous patch at root, then ochraceous grading into tawny at tip; hands and feet black. Ex type British Museum.

Measurements. Skull: total length, 92.2; occipito-nasal length, 81.8; intertemporal width, 44.7; Hensel, 65; zygomatic width, 67.6; breadth of braincase, 53.8; median length of nasals, 16.4; palatal length, 30.9; length of upper molar series, 22.6; length of upper canines, 16; length of mandible, 68.2; length of lower molar series, 30. Ex type British Museum.

The general appearance of this species is that of a reddish monkey quite different in coloring from its paler relatives of the L. CENTRALIS style. It is nearer to the animal from Portuguese East Africa, which has been accepted as representing L. RUFOVIRIDIS, but differs from that species in its pinkish buff whiskers, throat and general color of the under parts, and in its jet black hands and feet. A number of specimens from Fort Hall are in the British Museum.

Unfortunately there are no skulls of the *L. c. johnstoni* specimens, so I can make no comparison with them and that of the present species.

LASIOPYGA CALLIDA (Hollister).

Lasiopyga pygerythra callida Hollister, Smiths. Misc. Coll., LIX, 1812, p. 1.

Type locality. South side of Lake Naivasha, British East Africa.

Genl. Char. Chin black; sides of body ochraceous buff, hairs without annulations; allied to L. RUBELLA, and L. CENTRALIS; more ochraceous than L. PYGERYTHRA.

Color. Face and chin jet black; narrow indistinct black line on forehead, broadest above nose, above which is a rather broad white line, extending to side of head, the hairs tipped with black; hairs on top of head long, annulated with buff and black; whiskers long extending beyond ears white tipped with black; nape and upper parts to rump, the hairs drab gray at base then annulated with buff and black on nape, gradually becoming darker on lower back as the buff is more ochraceous, and the black becomes more dominant; flanks ochraceous buff without annulations; outer side of arms from wrists dark gray grading into buff and black on the shoulders; legs gray paler than arms and grading into the darker hues of the back; throat, entire under parts and inner side of limbs white; hands and feet jet black; tail above dark gray with an interrupted central line of black terminating in the jet black apical portion; beneath a dark bay spot at root, remainder grayish white grading into jet black at tip, this color being less extensive beneath than above. Ex type United States National Museum.

Measurements. Total length, 1,135; tail, 610; foot, 140; ear, 27. Skull: total length, 109.4; occipito-nasal length, 85.4; Hensel, 73; intertemporal width, 42.8; zygomatic width, 64.8; breadth of braincase, 55.2; median length of nasals, 15.3; palatal length, 44.1; length of upper molar series, 25.4; length of mandible, 74.6; length of lower molar series, 31.4.

Mr. Hollister made this animal a subspecies of *L. pygerythra,* but it would seem that its coloring and the black chin would give it more properly a place between L. RUBELLA and L. CENTRALIS. The general hue of the pelage, especially on the dorsal region, is much too dark for *L. pygerythra,* in fact it is not of the same character, but is much nearer the more tawny hue of L. RUBELLA; and its black hands and feet are quite unlike those of L. PYGERYTHRA. Its distinctive characters prohibit it from being regarded as a subspecies of any described form.

LASIOPYGA CENTRALIS (Neumann).

Cercopithecus centralis Neum., Zool. Jahrb., XIII, 1900, p. 533.

Cercopithecus æthiops centralis Thos., Proc. Zool. Soc. Lond., 1904, p. 459.

Cercopithecus cynosurus centralis Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 729.

Type locality. Bukoba, west shore of Victoria Nyanza. Type in Berlin Museum.

Geogr. Distr. Uganda, Bukoba, Barumba, Ankole, (Thomas); Juba River, S. E. boundary of Abyssinia, (Donaldson Smith).

Genl. Char. Similar to L. RUFOVIRIDIS, but paler, no reddish tints.

Color. Top of head buff; the hairs brown at base and ringed with black and buff; neck and upper parts greenish yellow, somewhat paler than the top of head; flanks paler, unspeckled; arms and legs pale gray; line on forehead, sides of head, throat, inner side of limbs and under parts yellowish white; chin black; hands and feet black; tail dark brown speckled with buff, apical portion black, beneath at root rufous; iris russet. Ex type Berlin Museum.

Measurements. Total length, 1,170; tail, 650. Skull: total length, 100; occipito-nasal length, 83; Hensel, 70; intertemporal width, 40; zygomatic width, 70; median length of nasals, 15; length of upper molar series, 26.5; length of mandible, 75; length of lower molar series, 31. Ex type Berlin Museum.

The present form is like L. RUFOVIRIDIS, but is generally paler throughout without any red tints whatever.

A specimen in the British Museum collected by Dr. Donaldson Smith on the Juba River cannot be separated from the Ankole examples, west of Victoria Nyanza.

LASIOPYGA CENTRALIS WHYTEI (Pocock).

Cercopithecus cynosurus whytei Pocock, Proc. Zool. Soc. Lond., 1907, p. 738.

Type locality. Mt. Chiradgula, Nyassaland. Type in British Museum.

Geogr. Distr. Nyassaland to Mozambique. Tambarara, (Grant).

Genl. Char. Similar to L. CENTRALIS, but under fur sooty; whiskers annulated toward tip.

Color. Broad white brow band, joining the whiskers which are the same color, extends over and beyond the ears, and the hairs are annulated near tip with yellow and black, and tips black; narrow black line at base of brow band; top of head, dorsal line between shoulders, lower back and rump rather finely speckled black and yellow, with a slight greenish tinge; shoulders and flanks paler, speckled black and cream buff, with under fur grayish white; under fur on back sooty; outer side of arms and legs speckled gray and white; hands and feet brownish black; chin, under side of jaw, upper lip and face black; sides of neck and throat buffy white; rest of under parts, inner side of arms to wrists, and of legs to ankles grayish white; tail above speckled gray and buff for basal half, grading into jet black towards tip, beneath gray for basal half, then buff and black at tip. Ex type British Museum.

Measurements. Total length, 1,320; tail, 780; foot, 130.

This race is very like *L. c. johnstoni,* but differs in the speckling on the upper parts, which is not so coarse, and the fur is softer and finer. When specimens are placed side by side the difference is quite perceptible, but is difficult to express in a description.

LASIOPYGA CENTRALIS JOHNSTONI (Pocock).

Cercopithecus cynosurus johnstoni Pocock, Proc. Zool. Soc. Lond., 1907, p. 738.

Type locality. Moshi, south side of Mt. Kilimanjaro; elevation 5,000 feet. Type in British Museum.

Genl. Char. Differs from L. CENTRALIS in having the legs and arms speckled.

Color. Brow band yellowish white extending on to the long hairs of the whiskers, which are the same color, and are directed backward and upward, and banded near tip with black; top of head speckled buff and black, with a reddish hue on forehead; upper part of back, shoulders and flanks, with the hair quite long, pinkish gray at base, and speckled with cream buff and brownish black, the latter not showing prominently; lower back and rump darker, the brownish black bands becoming more prominent especially on lower rump near tail; chin white; sides of neck and throat yellowish white; under parts and inner side of limbs grayish white; hands and feet black; outer side of limbs speckled gray and white; tail, above speckled buff and black, tip black, beneath, deep red patch at base, remainder buff and gray to tip. Ex type British Museum.

Measurements. Total length, 1,150; tail, 750.

The lower back of this race is more coarsely speckled than is the same part in *L. c. whytei,* and the black is more conspicuous than any other color.

LASIOPYGA CENTRALIS LUTEA (Elliot).

Cercopithecus centralis luteus Elliot.

Type locality. Wanbugu, S. W. Mt. Kenia, British East Africa. Type in United States National Museum.

Color. Black line formed of long hairs over eyes, succeeded by a cream buff broader band; rest of upper parts ochraceous buff, the hairs being gray at base, then banded with black and ochraceous buff and tipped with black, but the light color predominates; flanks paler; outer side of arms and thighs dark gray, hairs with white tips; outer side of legs to ankles smoke gray, hairs white tipped; chin black; cheeks, throat, and entire under parts, and inner side of limbs buff; hands black; feet iron gray; tail at root above like back, then gray with whitish tips to hairs, rusty brown on lateral third above and below, and tip black, rest of parts beneath whitish. Ex type United States National Museum.

Measurements. Total length, 990; tail, 570; foot, 120; ear, 28. Skull: total length, 90.7; occipito-nasal length, 79.4; Hensel, 60.3; zygomatic width, 61.1; intertemporal width, 43.6; palatal length, 31; median length of nasals, .94; length of upper molar series, 23.8; length of mandible, 67; length of lower molar series, 29.9. Ex type United States National Museum.

Similar to *L. c. johnstoni,* but under parts buff. Two specimens, both females, immature, in United States National Museum. The under parts, and inner side of limbs of these examples are conspicuously buff, strongly contrasted with the yellowish white of L. CENTRALIS, or grayish white of *L. c. johnstoni.*

LASIOPYGA SILACEA (Elliot).

Cercopithecus silaceus Elliot, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 263.

Type locality. East bank of the Loangwa River, Angoniland, Northwest Rhodesia. Type in British Museum.

Geogr. Distr. Loangwa River to Angola, West Africa.

Genl. Char. General hue yellowish green, speckled with yellow on the flanks and with no distinct black speckling.

Color. Grayish white brow band over eyes, mixed with black on hairs over nose, and at each end of band; hairs on head standing upright on front, speckled with black and tawny, the latter being the prevailing color; dorsal region from nape to tail speckled black and buff yellow, the back being equally prominent with the lighter color, especially on dorsal line from between shoulders and on lower back and rump, making these parts darker; back below shoulders on either side of the dorsal line, and flanks, buff yellow, annulated and tipped with brownish black, the lighter color, however, predominating to the extent of giving all these parts a yellowish appearance; shoulders darker than flanks, but not so dark as dorsal line, the hairs speckled ochraceous and black; outer side of arms and legs gray, speckled on arms above elbows, and on thighs with cream color and black, and on forearms and legs below knees, with black and white; wrists and hands black speckled with white; feet gray and black speckled, toes brownish black, with some white hairs intermingled; whiskers long, directed backwards hiding the ears, cream color annulated with black; face, lips and chin covered with short brownish black hairs; sides of neck, throat, inner side of limbs, and entire under parts white; tail above for three fourths the length speckled cream color and black, rest jet black; beneath with a rufous patch at root, rest whitish gray, becoming buff on apical part, the extreme tip only being black. Ex type British Museum.

Measurements. Total length, 1,190; tail, 730; foot, 125. Skull: total length, 103.2; occipito-nasal length, 87; intertemporal width, 42.9; Hensel, 72; zygomatic width, 72.9; width of braincase, 57.5; median length of nasals, 16.1; palatal length, 38.3; length of upper molar series, 25; length of upper canines, 15.5; length of mandible, 74.7; length of lower molar series, 30.8. Ex type British Museum.

There are three specimens of this species in the British Museum from the east bank of the Loangwa River, collected by S. A. Neave at an altitude of 2,200 feet, one from Limondi on the boundary between the English and Portuguese territories, and one from North Basihindo, Chiyaka District, Angola, West Africa, collected by Dr. F. C. Wellman. They closely resemble each other, giving the impression of a yellow monkey speckled on head, middle of back and rump with black, but the rings rather indistinct on flanks. By having the red patch beneath the tail at the root, the species shows its relationship to L. PYGERYTHRA, but it bears no resemblance whatever to that animal in its general coloration, and in fact is far too much of a yellowish hue to be compared with any other species of the genus. It doubtless is a dweller of the forests on the watershed from the Loangwa River westward to Angola. It is a large thick-set animal with rather short limbs and long tail.

LASIOPYGA NIGRIVIRIDIS (Pocock).

Cercopithecus nigroviridis Pocock, Proc. Zool. Soc. Lond., 1907, p. 739, pl. XLII, fig. 5; 1908, p. 160, pl. X, fig. 1.

Type locality. Upper Congo? Type in British Museum.

Genl. Char. Type immature; upper parts dark, under parts pale, uniform.

Color. Face brownish, eyelids flesh color; hairs on cheeks and upper lip black; superciliary line black, extending from corners of the eyes across temples to ears; black hairs of cheeks with subterminal yellow bands; head, neck, shoulders and upper parts of body and flanks speckled with black and golden yellow, there being two bands of the latter on each hair, base of hairs gray; outer side of arms grayish speckled with yellow; hands black; legs to ankles mostly yellow on outer side; feet black, hairs with yellow tips; chin, throat, sides of neck, inner side of limbs and under parts of body yellowish white;

tail above black speckled with yellow, beneath yellow. The hair is worn away on a great part of the tail. Ex type British Museum.

Measurements. Total length, 540; tail, 230; foot, 83. Ex type British Museum.

The type has been in captivity, as Mr. Pocock states (l. c.) and lived in the gardens of the Zoological Society for about twenty months. It has no definite locality, but is supposed to be a native of the Upper Congo. More specimens are necessary before its definite specific status can be established.

Subgenus 6. Mona.

Ears tufted, white or cream color; brow band usually extending upwards on to the crown, or backwards to ears, sometimes both; stripes or bars on head present in some species. Hairs of body speckled on various parts of body with different colors.

KEY TO THE SPECIES AND SUBSPECIES.

- A. No bars on head.
  - *a.* Lower back speckled.
    - *a.′* Upper parts speckled rusty red and black...... *L. mona.*
    - *b.′* Upper parts speckled burnt sienna and black .... *L. denti.*
    - *c.′* Upper parts speckled black and white, dorsal line chestnut and black speckled....... *L. wolfi.*
  - *b.* Lower back not speckled.
    - *a.′* Lower back slate black.................. *L. campbelli.*
    - *b.′* Lower back jet black.................... *L. burnetti.*
    - *c.′* Dorsal area from below shoulder to tail jet black .... *L. pogonias.*
- B. Bars on head.
  - *a.* Lower back not speckled.
    - *a.′* Dorsal region from middle of back jet black .... *L. nigripes.*
    - *b.′* Rump only black .... *L. grayi.*
  - *b.* Lower back speckled .... *L. g. pallida.*
  - *c.* Entire back speckled .... *L. petronellæ.*

Lasiopyga mona (Schreber).

Simia mona Schreb., Säugth., I, 1775, p. 97, pl. XV; Bodd., Elench. Anim., 1784, p. 59.

Cercopithecus mona Erxl., Syst. Regn. Anim., 1777, p. 30; E. Geoff., Cours Hist. Nat. Mamm., 1828, p. 19, 8me Leçon; Less., Spec. Mamm., 1840, p. 71; Martin, Mammif. Anim., 1841, p. 527; I. Geoff., Dict. Hist. Nat., 1849, p. 304; *Id.* Cat. Primates, 1851, p. 20; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 47; Dahlb., Stud. Zool. Fam. Reg. Anim. Nat., fasc. I, 1856, pp. 103, 107; Reichenb., Vollständ. Naturg. Affen, 1862, p. 109, figs. 271-275; Gray, Proc. Zool. Soc. Lond., 1868, p. 182; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 22; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 80; Anders., Cat. Mamm. Ind. Mus. Calc., 1881, p. 57; Sclat., Proc. Zool. Soc. Lond., 1893, p. 250; Forbes, Handb. Primates, II, 1894, p. 66; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 709, fig. 184; N. Hollist., Proc. Biol. Soc. Wash., XXV, 1912, p. 93.

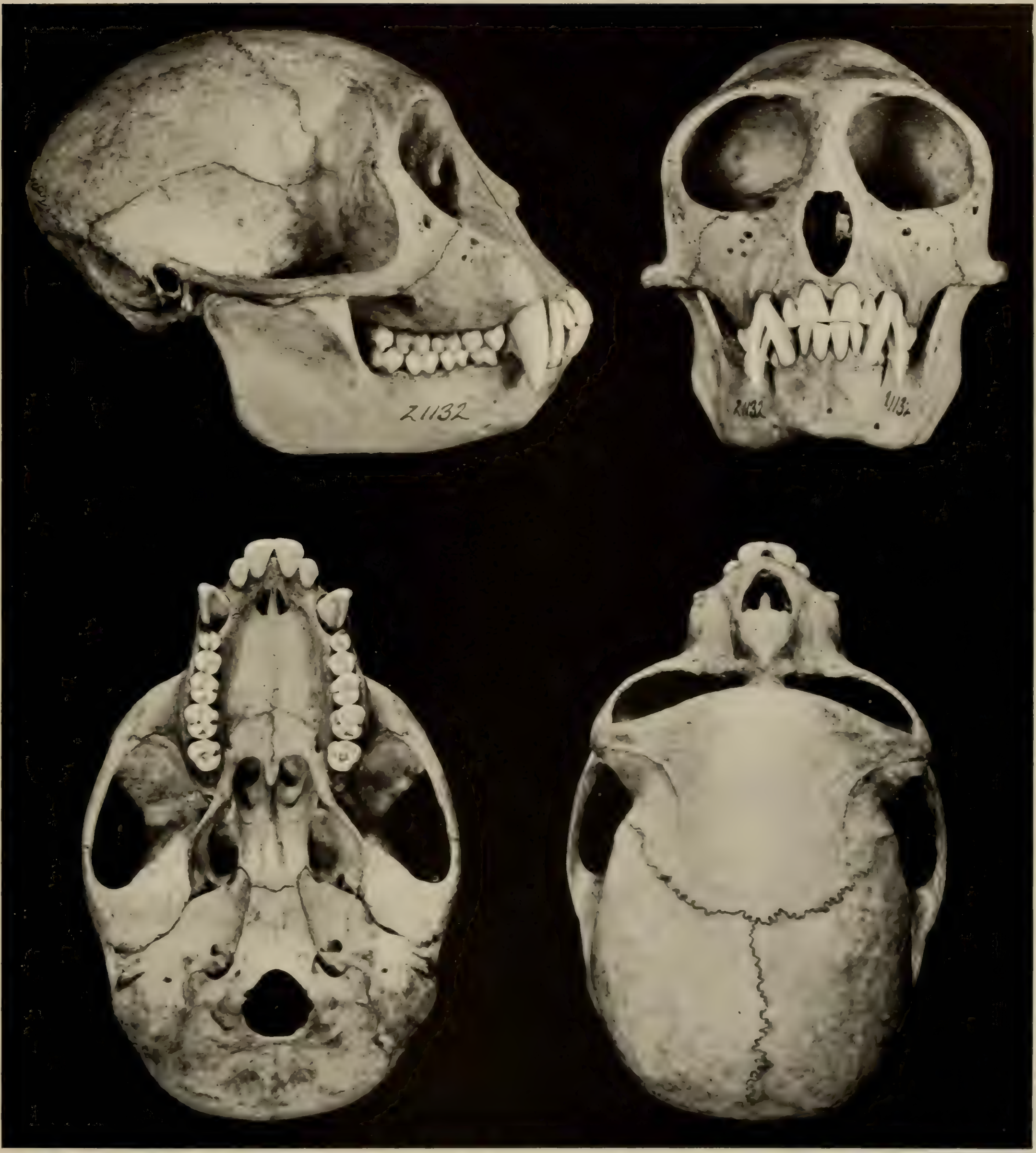
MONA GUENON.

Type locality. 'Barbary.'

Geogr. Distr. Jebba, River Niger, (C. F. Abadie); Bankana, Southern Nigeria, (Ansorge); Gold Coast to Cameroon, West Africa; islands of St. Kitts, and Grenada, West Indies, (introduced).

Color. Long, upright white hairs across forehead forming a band extending upward on head; at its base a narrow line of black; top of head speckled yellow and black, this coloring extending downward on to hind neck; entire upper part and sides of body speckled rusty red and black, darkest on lower back; cheeks and sides of head, hairs long, gray, ringed on apical portion with yellow and black; outer side of arms and hands black; outer side of legs black speckled with minute red spots; feet black; chin, throat, entire under parts, and inner side of limbs grayish white; conspicuous patch beneath tail to hip snow white; tail above, basal third speckled red and black, yellowish gray beneath, remainder black; ear tufts long, speckled with greenish yellow.

Measurements. Total length, 1,295; tail, 785; foot, 145. Skull: total length, 93.7; occipito-nasal length, 77.9; intertemporal width, 39.1; Hensel, 60.5; zygomatic width, 59.7; breadth of braincase, 52.7; median length of nasals, 13.6; palatal length, 32.2; length of upper molar series, 23.2; length of mandible, 59.2; length of lower molar series, 30. One of the commonest species of the genus.



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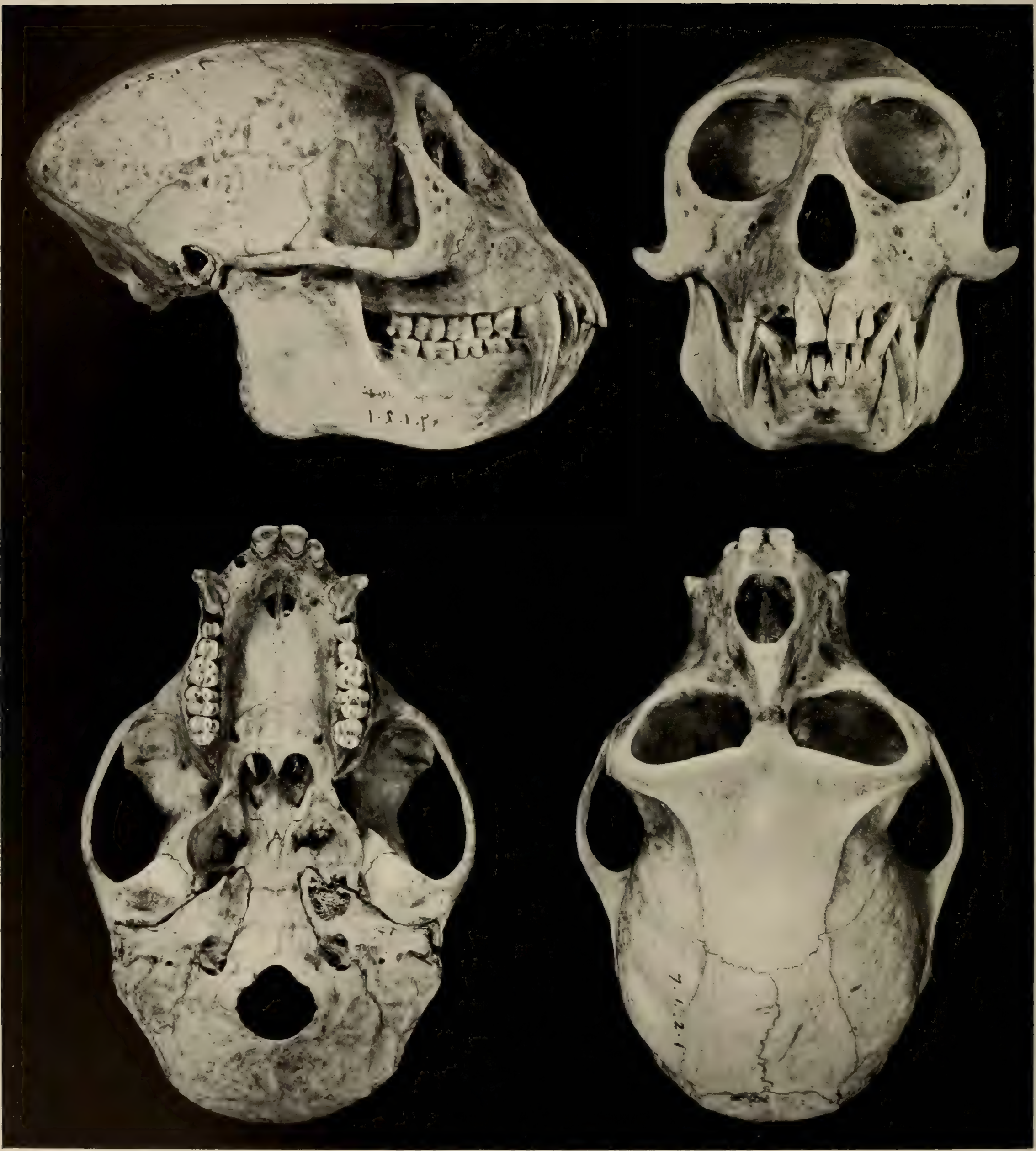
Lasiopyga mona.

No. 21132 U. S. Nat. Mus. Coll. 4/5 Nat. Size.



Lasiopyga denti.

No. 7.1.2.1. Brit. Mus. Coll. ⅘ Nat. Size.

Lasiopyga denti (Thomas).

Cercopithecus denti Thos., Proc. Zool. Soc. Lond., 1907, p. 2, pl. I; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 711.

Type locality. Ituri forest between Mawambi and Avakubi, Upper Congo, (R. E. Dent). Type in British Museum.

Color. Similar to L. MONA, but darker above; brow band white annulated with black; top and sides of head in front of ears, shoulders and hind neck speckled greenish yellow and black; cheeks pale buff yellow; entire upper parts and flanks speckled burnt sienna and black; outer side of legs similar but lighter; outer side of arms black, speckled with yellowish to elbows; hands and feet black; sides of neck grayish white speckled with yellow and black; tufts of black hairs at corner of eyes; entire under parts, and inner side of limbs yellowish white; no white patch on side of callosities; tail, at base black speckled with burnt sienna, then greenish gray grading into black on apical portion, beneath yellowish gray to apical portion which is black above and below; ears with white tufts. Ex type British Museum.

Measurements. Total length, 1,351; tail, 850; foot, 155; ear, 40, (Collector). Skull: total length, 105.2; occipito-nasal length, 87.5; intertemporal width, 42.9; Hensel, 72.8; zygomatic width, 70.5; width of braincase, 55; median length of nasals, 16.9; palatal length, 34.4; length of upper molar series, 22.1; length of upper canines, 21.5; length of mandible, 68.5; length of lower molar series, 38.1. Ex type British Museum.

While resembling L. MONA in general pattern of coloring, the present species is much darker; the space between shoulders is not like the back, but more like the head though much darker, and the tail between the base and tip is much lighter and grayer.

Lasiopyga wolfi (Meyer).

Cercopithecus wolfi Meyer, Notes Leyd. Mus., XIII, 1891, p. 63; *Id.* Proc. Zool. Soc. Lond., 1894, p. 83, pl. VII; Sclat., Proc. Zool. Soc. Lond., 1893, p. 258; Matschie, Sitzungsb. Gesell. Naturf. Freunde, Berlin, 1893, p. 216; Forbes, Handb. Primates, II, 1894, p. 79; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 711.

WOLF'S GUENON.

Type locality. Unknown.

Geogr. Distr. French Congo, Brazzaville, (Hamlyn); Batempas, Sunkuru, Congo, West Africa.

Color. Mixed white and black band on center of forehead over eyes, the white hairs very long and extending to ears; sides of forehead and band extending backwards to ear, jet black; top of head, hind neck, shoulders and upper parts except dorsal line, black, hairs tipped with white; dorsal line from middle of back to rump speckled chestnut and black; cheeks mixed buff yellow and black, the buff yellow predominating; whiskers cream color grading into white of neck and throat; outer side of arms black, the hairs to elbows tipped with white, the black on lower side edged with orange yellow; stripe along flanks below back orange yellow; thighs tawny ochraceous on outer side uniform, but black speckled towards hinder edge; below knees tawny, becoming speckled like thighs towards hinder part; chin, throat, inner side of limbs white; under parts of body yellowish white; hands and feet black; tail, above black and gray speckled, gradually passing into black, which color embraces over half the length of the tail, beneath at base yellowish gray; ear tufts orange.

Measurements. Total length, 1,270; tail, 790, (skin). Ex specimen from Batempas, Sunkuru, Congo. Skull: total length, 95; occipito-nasal length, 82.9; intertemporal width, 43.4; Hensel, 68.1; zygomatic width, 62.2; median length of nasals, 13.5; palatal length, 34.4.

A living example of this beautiful species was in the Menagerie of the Royal Zoological Society at Antwerp, Belgium, where I saw it in 1909.

LASIOPYGA CAMPBELLI (Waterhouse).

Cercopithecus campbelli Waterh., Proc. Zool. Soc. Lond., 1838, p. 61; Martin, Mammif. Anim., 1841, p. 544; Fras., Zool. Typ., 1848, pl. III; Peters, Reis. Mossamb., Säugth., 1852, p. 4; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 44; Reichenb., Vollständ. Naturg. Affen, 1862, p. 109, fig. 270; Gray, Proc. Zool. Soc. Lond., 1868, p. 182; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 24; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 79; Jent., Notes Leyd. Mus., X, 1888, p. 9; Sclat., Proc. Zool. Soc. Lond., 1893, p. 251; Forbes, Handb. Primates, II, 1894, p. 70; Pousarg., Ann. Scien. Nat., I, 1896, p. 265; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 710, pl. XL, fig. 1.

CAMPBELL'S GUENON.

Type locality. Sierra Leone.

Geogr. Distr. Sierra Leone, West Africa.

Color. A broad silver gray band separated in the middle, and extending towards ears; cheeks yellowish gray, black and speckled; top of head, hind neck speckled yellow and black; upper back and shoulders speckled russet and black, the speckling gradually disappearing on lower back which becomes a nearly uniform slate black; throat and chest grayish white; under parts slate gray; outer side of arms black; outer side of legs and feet black speckled with grayish white; inner side of limbs white; hands black; tail above at base black speckled with reddish, then dark gray and yellow speckled, the remaining third of the length to the tip jet black, beneath gray and yellow, the latter the dominant color for nearly two thirds the length, rest black; hairs on ears speckled black and yellow.

Measurements. Total length, 1,447.8; tail, 1,018.7; foot, 114.3. No skull obtainable.

LASIOPYGA BURNETTI (Gray).

Cercopithecus burnetti Gray, Ann. Mag. Nat. Hist., 1st Ser., X, 1842, p. 256; Reichenb., Vollständ. Naturg. Affen, 1862, p. 110; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 710, pl. XL, fig. 2.

Type locality. Fernando Po. Type in British Museum.

Geogr. Distr. Ashantee, Accra, Gold Coast, Cameroon, (Burton); Island of Fernando Po.

Genl. Char. Forehead yellowish; cheeks and sides of neck olive gray; ear fringe red.

Color. Forehead with some yellowish gray hairs between eyes; black band from corners of eyes to head; head above, hairs black from roots ringed with tawny; those on upper parts of body gray, annulated with tawny and black, this forming a band on dorsal line nearly to tail; flanks, sides of rump, outer side of limbs, hands and feet black; whiskers radiating from corner of the eye olive gray speckled with tawny and yellow; chin, throat, under parts of body, inner side of arms to elbows, and thighs grayish white; arms from elbows, and legs from knees sooty gray; tail above black speckled with tawny for over half the basal length, beneath paler, tip black; ear fringe reddish. Ex type British Museum.

Measurements. Total length, 750; tail, not perfect, 440; foot, 120.

The type was presented to the British Museum in 1844, by Mr. Thomas Thompson, but no locality is given. It differs from L. CAMPBELLI in the yellow patch on forehead, and in the olive gray cheeks, and darker lower back. No skull. The type is numbered 44. 11. 2. 3.

Lasiopyga pogonias (Bennett).

Cercopithecus pogonias Benn., Proc. Zool. Soc. Lond., 1833, p. 67; Less., Spec. Mamm., 1840, p. 74; Martin, Mammif. Anim., 1841, p. 543; Reichenb., Vollständ. Naturg. Affen, 1862, p. 109; Gray, Proc. Zool. Soc. Lond., 1868, p. 182; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 23; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 82, (Part.); Sclat., Proc. Zool. Soc. Lond., 1893, p. 254; Forbes, Handb. Primates, 1894, p. 78; Pousarg., Ann. Scien. Nat., III, 7me Sér., 1896, p. 212; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 713.

BEARDED GUENON.

Type locality. Fernando Po, West Africa.

Geogr. Distr. Fernando Po, Gaboon, Ogowé and Oubangui rivers; forests of Mayumbe, Sette Cama, French Congo; West Africa.

Genl. Char. Forehead yellow, only a few black hairs on the middle; black dorsal stripe present from center of back to tail.

Color. Forehead between eyes, hairs buff, some tipped with black; black stripe from eyes over temples to ear; top and back of head, upper back, sides of body, outer side of arms speckled black and buff or gray; the hairs being gray and the grayish white speckle most apparent on shoulders, arms and flanks; from center of back to tail runs a broad jet black band; thighs yellowish brown tinged with red; sides of face and neck sooty gray, sparsely speckled with yellowish or grayish white; chin and throat sooty; under parts of body and inner side of limbs rusty red; tail black at root above, then mixed black and ochraceous, rest jet black, beneath tawny ochraceous, apical half black; hands and feet black.

Measurements. Total length, 1,397; tail, 889; foot, 152.4. Skull: total length, 100; occipito-nasal length, 86; Hensel, 67; intertemporal width, 43; palatal length, 36; zygomatic width, 73; breadth of braincase, 57; median length of nasals, 16; length of upper molar series, 23; length of mandible, 62; length of lower molar series, 29.

Lasiopyga pogonias nigripes (Du Chaillu).

Cercopithecus nigripes Du Chaillu, Proc. Bost. Soc. Nat. Hist., VII, 1860, p. 360; Gray, Proc.. Zool. Soc. Lond., 1861, p. 274; 1868, p. 182; Reichenb., Vollständ. Naturg. Affen, 1862, p. 110; Sclat., Proc. Zool. Soc. Lond., 1893, p. 254; Forbes, Handb. Primates, II, 1894, p. 78.

Cercopithecus erxlebeni var. *nigripes* Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 23.

Cercopithecus pogonias Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 82, (Part.).

Cercopithecus grayi nigripes Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 713.

BLACK-FOOTED GUENON.

Type locality. Gaboon, West Africa.

Color. Yellowish white band on forehead between eyes extending backward on sides of crown nearly to occiput; sides of head between eyes and ears, and middle of crown jet black; a few yellow speckles on crown; occiput, hind neck, and between shoulders speckled black and yellow; middle of back tawny ochraceous and black speckled, rest of back to tail jet black; flanks gray, speckled on apical portion of hairs with black and white; outer side of arms and hands black speckled near shoulder with white; legs gray annulated towards tip with black and white; feet black; cheeks and whiskers buff yellow; entire under parts and inner side of limbs orange buff; tail above black, beneath ochraceous rufous for two thirds the length where it grades into black; above black for the entire length; ear tufts ochraceous buff.

Measurements. Total length, 1,160; tail, 710; foot, 125. Skull: total length, 85; occipito-nasal length, 74; intertemporal width, 42.5; Hensel, 57.6; zygomatic width, 60; width of braincase, 53.6; median length of nasals, 16; palatal length, 30.3; length of upper molar series, 23.5; length of mandible, 54.2; length of lower molar series, 27.6.

Similar to L. POGONIAS, but dorsal stripe broader and not so dark.

LASIOPYGA GRAYI (Fraser).

Cercopithecus grayi Fras., Cat. Knowsl. Coll., 1850, p. 8; Gray, Proc. Zool. Soc. Lond., 1868, p. 182; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 22, (Part.); Sclat., Proc. Zool. Soc. Lond., 1893, p. 256; 1896, p. 484; Matschie, Sitzungsb. Gesell. Naturf. Freunde, Berlin, 1893, p. 214; Forbes, Handb. Primates, II, 1894, p. 77, pl. XXIII; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 712.

Cercopithecus erxlebeni Dahlb. et Pucher., Rev. Mag. Zool., 1856, p. 96; 1857, p. 196; Dahlb., Stud. Zool. Fam. Reg. Anim. Natur., fasc. I, 1856, pp. 102, 106; Reichenb., Vollständ. Naturg. Affen, 1862, p. 110; Gray, Proc. Zool. Soc. Lond., 1868, p. 182; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 23; Sclat., Proc. Zool. Soc. Lond., 1905, p. 70; Elliot, Cat. Mamm. Field Columb. Mus., F. C. M. Pub., VIII, 1906, p. 569, Zool. Ser.

Cercopithecus pogonias Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 82, (Part.).

GRAY'S GUENON.

Type locality. Unknown.

Geogr. Distr. River Congo, Southern Cameroon, (Bates); West Africa.

Genl. Char. Head yellow with three black stripes; no black on back.

Color. Male. Brow band exceedingly broad extending to crown cream color, divided in the middle by a narrow black line; black bands from eye across temples to ears; top of head, occiput, hind neck, and space between shoulders black, hairs tipped with yellow; dorsal region speckled rufous and black, becoming jet black at root of tail, the rump but sparsely speckled nearly black; flanks towards arms speckled yellow and black, the posterior half towards thighs gray, speckled with black and white; sides of face and whiskers yellow, speckled with black; outer side of arms, hands and feet black, speckled with white above elbows; legs on outer side like thighs grizzled iron gray; entire under parts, and inner side of limbs orange buff, the hairs being yellowish white at base; tail above jet black, beneath buff yellow, apical portion orange buff; ear tufts ochraceous buff.

Measurements. Total length, 1,417; tail, 870; foot, 142; ear, 28, (Collector). Skull: total length, 100; occipito-nasal length, 86.3; intertemporal width, 44.5; Hensel, 68.3; zygomatic width, 68.4; width of braincase, 55.4; median length of nasals, 14; palatal length, 31.3; length of upper molar series, 24.7; length of upper canines, 20.1; length of mandible, 69.7; length of lower molar series, 28.2.

LASIOPYGA GRAYI PALLIDA (Elliot).

Cercopithecus pogonias pallidus Elliot, Ann. Mag. Nat. Hist., IV, 8th Ser., 1909, p. 261.

Type locality. Gaboon. Type in British Museum, ex Laglaize Collection.

Geogr. Distr. Gaboon.

Genl. Char. Similar to L. GRAYI, but paler beneath, no uniform black on rump, hairs speckled like back to root of tail.

Color. Female. Forehead like L. GRAYI; upper part of head, hind neck and between shoulders redder, speckled with buff yellow and black, the buff yellow being the dominant color and giving the tone to all this part; upper parts of body to tail much redder, speckled ochraceous rufous and black, becoming darker towards root of tail where the speckling is less; flanks gray, speckled on apical half of hairs with yellow and black; outer side of arms and hands black, speckled to elbows with cream color; legs pale gray, speckled with white; feet, posterior half speckled gray and white, anterior half and toes black; whiskers yellowish gray annulated at tip with black and yellow; entire under parts and inner side of limbs whitish yellow; tail above black, beneath yellowish with black mixed, and grading into black towards the tip; ear tufts buff. Ex type British Museum.

Measurements. Total length, 1,295; tail, 705; foot, 115, (skin). Skull: total length, 90; occipito-nasal length, 78.3; intertemporal width, 37.6; Hensel, 54.8; zygomatic width, 56.2; width of braincase, 51.1; median length of nasals, 16.5; palatal length, 31; length of upper molar series, 23; length of mandible, 56.3; length of lower molar series, 26.7. Ex type British Museum.

The specimens from Gaboon are much paler than those from the Benito River even when examples of the same sex are compared. The head, upper part of back, legs and under parts of body are much paler in their different colors, and the dorsal region is paler and brighter, appearing more red, and there is an absence of clear black at root of tail, the speckling of the back continuing to the tail. There exist several points of difference in cranial characters, which, if sustained by a number of individuals, would be sufficient to give to this form specific rank. On comparing the skull of the type with that of a female from the Benito River, the great difference in the superior outline is seen. In the Gaboon skull there is an abrupt rise of the frontal from the posterior base of the orbital ridge, with a gradual curve to the fronto-parietal suture, which then drops more than a 45° angle to the occipital. The skull of this female from the Benito River has a flat frontal on a line with the orbital ridge, and descends much more rapidly from the fronto-parietal suture to the occipital; the anterior portion of the nasals in the type is nearly at a right angle to the posterior portion, the projecting forward occurring at about midway their length, causing the narial opening to be horizontal save for its anterior third; the rostrum of the Gaboon specimen is narrower; the palate is narrower and deeper, and the molar series are longer by the width of a molar tooth; the zygomatic arches are different in shape, that of the type curving rapidly inward anteriorly, while those of the San Benito River examples are straight for nearly their whole length.

Even comparing the skull of the male from the Benito River with the type of *L. g. pallida,* the much higher elevation of the frontal bone in the skull of the latter is clearly perceptible, and the more prominent anterior portion of the nasals is also easily noticed. These differences in colors and cranial characters seem to warrant the separation of the Gaboon Monkeys, as a race at least, from L. GRAYI.

LASIOPYGA PETRONELLÆ (Buttikofer).

Cercopithecus petronellæ Buttikofer, Notes from Leyden Museum, XXXIV, 1911, p. 1.

WHITE-CROWNED GUENON.

Type locality. Upper Congo, exact locality unknown. Type in Leyden Museum.

Color. "A narrow, but rather high median crest, beginning near the front and ending on the center of the crown, entire hinder crown, occiput and hind neck down to the shoulders olive-green, speckled with black, each hair being black with commonly two broad yellowish rings, of which the outer one is subterminal, leaving a long black tip to each hair. Whole back from the shoulders to the root of the tail, and even extending upon the latter, rich chestnut-brown, with black specklings, produced by the black tips to each hair. No black on the arms, their outer surface being olive-green like crown and hind neck; outer surface of legs olive yellow, faintly speckled with black; no white patches on crupper, hands and feet grayish, scarcely tinged with olive. Front and sides of anterior crown white, faintly speckled with black, the white crown patches separated by the narrow olive-green crest, and bordered on the outside by a broad, pure black band, running from the orbits to and even below the ears. Long, bushy whiskers below this black stripe, and a long tuft of hairs in the ears, proceeding far behind the top of the hinder edge of the ear, yellowish white. Chin, throat, breast and inner surface of arms white, with a yellowish tinge, belly and inner surface of legs uniform ochraceous yellow. Tail olive green on its basal half, passing into black on the terminal half and becoming pure black at the tip. Skin of face blue, upper and lower lip flesh-color, covered with very short white hairs, intermixed with sparsely-set long, bristly hairs which, like the long hairs of the eyebrows, are black. Skin of the whole body underneath the fur, light blue. Iris light chestnut-brown."

Measurements. "Total length, 1,020; tail, 640; fore-arm from elbow to tip of fingers, 170; leg from knee to heel, 140; foot from heel to tip of toes, 120."

This remarkable monkey has been lately described by Dr. Buttikofer (l. c.). It differs from all the Guenons in the peculiar coloration of the head and the narrow central hairy crest. The type, and two living individuals, one in the Royal Zoological Gardens at Antwerp, and one in the possession of Mr. L. Ruhe at Alfeld, are the only examples known.

Subgenus 7. Insignicebus.

A conspicuous white collar about neck, sometimes present.

KEY TO THE SPECIES AND SUBSPECIES.

- A. With white collar.
  - *a.* Without ear tufts; inner side of limbs white...*L. albitorquata.*
  - *b.* With ear tufts.
    - *a.′* Lower back dark ochraceous rufous and black speckled ....*L. kolbi.*
    - *b.′* Lower back yellowish brown ....*L. k. nubila.*
    - *c.′* Lower back burnt sienna and black speckled.*L. k. hindei.*
- B. No white collar.
  - *a.* Aural region not red or reddish.
    - *a.′* Tail not white on one third of length beneath.
      - *a.″* Lower back speckled with ochraceous and black, no red at root of tail ....*L. albigularis.*
      - *b.″* Lower back speckled cream buff and black ....*L. a. beirensis.*
      - *c.″* Lower back speckled with reddish yellow, red at root of tail.....**L. a. kinobotensis.*
      - *d.″* Lower back speckled with reddish orange and black ....*L. rufilata.*
      - *e.″* Lower back speckled with reddish chestnut and black ....*L. moloneyi.*
      - *f.″* Lower back speckled with ochraceous buff and black ....*L. francescæ.*
      - *g.″* Lower back speckled with reddish cinnamon and black ....*L. preussi.*

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*I cannot be certain that this is the proper place for this form.

h.″ Lower back speckled with black and buff ....*L. p. insularis.*
i.″ Lower back speckled with tawny ochraceous, and black ....*L. thomasi.*
j.″ Lower back speckled with black and buff yellow ....*L. kandti.*
k.″ Lower back dark orange unspeckled ....*L. insignis.*

A. Aural region red or reddish.
- *a.* Tail beneath silvery white.
  - *a.*′ Legs not grizzled iron gray ....*L. stairsi.*
  - *b.*′ Legs grizzled iron gray
    - *a.*″ Crown of head not reddish .....*L. s. mossambicus.*
    - *b.*″ Crown of head reddish ....*L. rufitincta.*
- *b.* Tail yellowish white beneath for one third its length from root ....*L. labiata.*

LASIOPYGA ALBITORQUATA (Pousargues).

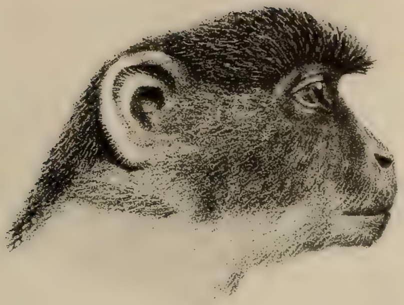
Cercopithecus albitorquatus Pousarg., Bull. Mus. Hist. Nat. Paris, III, 7me Sér., 1896, p. 55; Neum., Proc. Zool. Soc. Lond., II, 1902, p. 144; Pocock, Proc. Zool. Soc. Lond., 1907, p. 702, pl. XXXIX, fig. 4.

Type locality. Unknown. Type in Paris Museum.

Geogr. Distr. Unknown.

Color. Top of head and sides to bottom of ears ochraceous, the hairs black with ochraceous tips; lower part of side of head and neck to near middle of hind neck, top of shoulders, chin, throat, under parts and inner side of limbs, white; narrow line on center of hind neck, and back between shoulders ochraceous and black like top of head; arms black, speckled with white above elbows; hind limbs iron gray, nearly black on front edge of thighs, and legs nearly to ankles, where it becomes yellowish white like a patch; upper part of back ochraceous, becoming reddish on rump; anal portion, and inner edge of thighs, the hairs forming a fringe, the long ones at this part having white bars and with apical half red, and standing out from the thighs to below knees; hands, feet and ears black; tail red at root, remainder has the hairs tipped with white, giving a grizzled appearance in places. Ex type Paris Museum.

Measurements. Total length, 1,447.8; tail, 939.8; foot, 139.7. Skull in type specimen.



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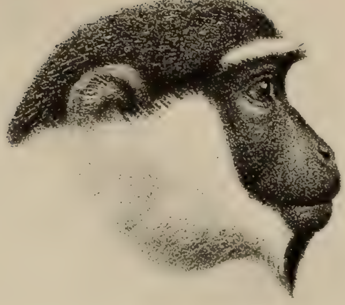

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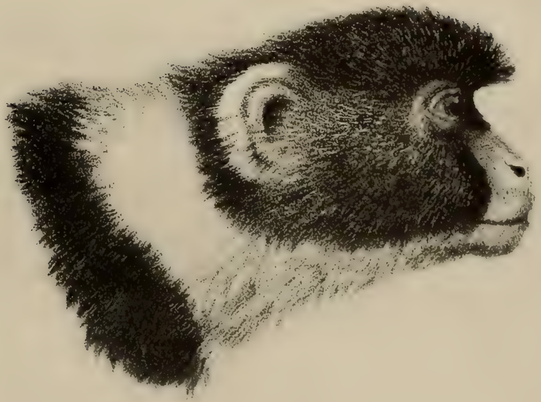

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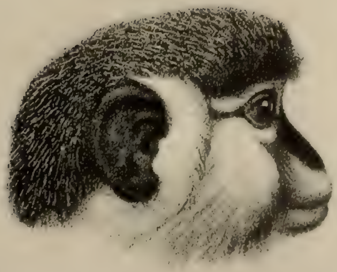

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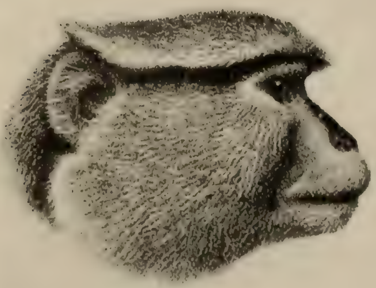
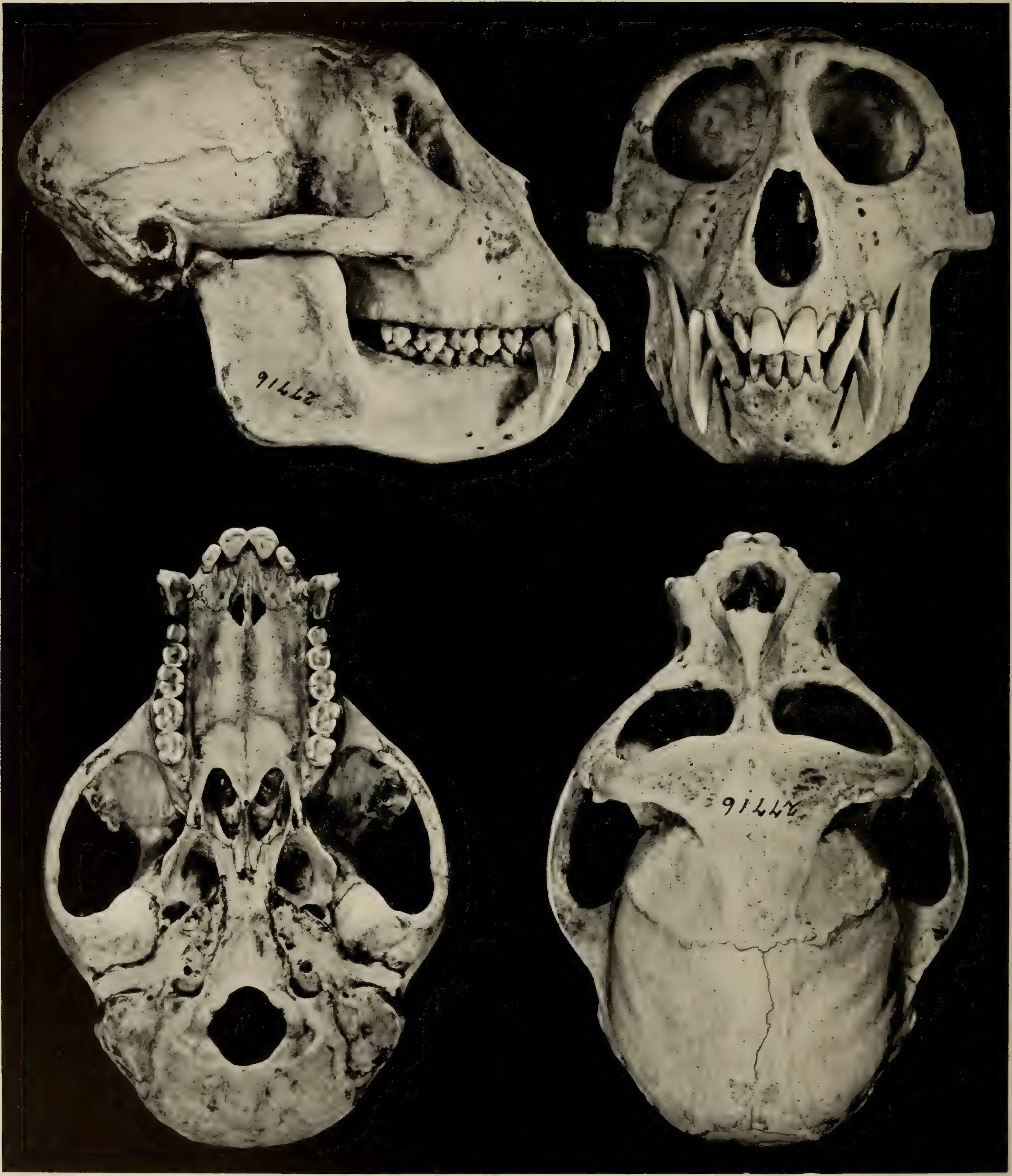


5.

1. Lasiopyga albitorquata.
2. Lasiopyga diana.
3. Lasiopyga kolbi hindei.
4. Miopithecus talapoin.
5. Erythrocebus patas.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Lasiopyga kolbi.

No. 27716 Amer. Mus. Nat. Hist. Coll. 4/5 Nat. Size.

The white on side of head and neck of the type is very extensive and forms a broad collar nearly around the neck, only divided by the narrow line on hind neck. The specimen appears to have no history beyond the fact that it was given by M. Portier-Prohou, that it died in the Menagerie on May 5th, 1887, and that it may have come from West Africa.

LASIOPYGA KOLBI (Neumann).

Cercopithecus kolbi Neum., Proc. Zool. Soc. Lond., II, 1902, p. 144; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 703.

KOLB'S GUENON.

Type locality. Kedong Escarpment, east side of Mt. Kenia, British East Africa. Type in Berlin Museum.

Geogr. Distr. Restricted apparently to Mount Kenia, British East Africa.

Genl. Char. Similar to L. ALBITORQUATA, but white of throat extends as half collar around the neck.

Color. Male. Forehead, top of head and nape ochraceous and black, darkest on crown; side of head and cheeks speckled yellow and black; narrow line between shoulders widening out behind shoulders, speckled black and white, gradually changing on lower back and rump to dark ochraceous rufous and black; cheeks, and broad white collar on sides of neck reaching on to the back, but separated by the speckled black and white portion of the hind neck and upper back; chin and throat white; outer side of arms black speckled with white, inner side black; hands black; under parts and legs dark gray banded with black; tail at root like back, mixed black and ochraceous rufous for about one third the total length, remainder jet black; feet black; ears with long white tufts; end of nose and lips covered with white hairs. Ex type British Museum.

Measurements. Total length, 1,370; tail, 790; foot, 110, (skin). Skull: total length, 115.2; occipito-nasal length, 96.5; intertemporal width, 42.1; Hensel, 42.6; zygomatic width, 76.2; width of braincase, 55.3; median length of nasals, 23.5; palatal length, 43.1; length of upper canines, 24; length of upper molar series, 27.2; length of mandible, 83.6; length of lower molar series, 33.3. Ex type British Museum.

While having a general resemblance to L. ALBITORQUATA Pousargues, it will be seen, by comparing the above with the description of the type of the allied species, that there are several important differences between them in coloration; such as the color of the inner side of limbs, white in one, and black and gray speckled in the other: the long white and red hairs on inner side of thighs, absent in *L. kolbi,* and the long white tufts on ears of present species. The skull of L. ALBITORQUATA being in the specimen, no comparison could be made between it and that of the present species.

LASIOPYGA KOLBI NUBILA (Dollman).

Cercopithecus kolbi nubilus Dollman, Ann. Mag. Nat. Hist., 8th Ser., V, 1910, p. 202.

Type locality. Nairobi forest, British East Africa. Type in British Museum.

Genl. Char. Like L. KOLBI, but smaller and duller in color on upper parts, and under parts grayish white.

Color. Between shoulders black speckled with greenish buff; lower back and rump yellowish brown; cheeks and sides of head grayish black with a buff tinge; ear tufts white; white collar about neck; under parts gray speckled with silver gray; indistinct white band across chest; outer surface of limbs brownish black, gray speckled; hands and feet brownish black. Tail like that of L. KOLBI, but the buff color extends on basal portion a few inches only.

Measurements. Total length, 1,270; tail, 650; foot, 121; ear, 27. Skull: greatest length, 70; Hensel, 63.4; zygomatic width, 64; width across orbits, (fronto-jugal suture), 53; width of orbit, 24; width of braincase, 54; median length of nasals, 12; palatal length, 30; length of upper molar series, 25.

The type of this species is one of the few I have not seen, the animal having been described after I had left England.

LASIOPYGA KOLBI HINDEI (Pocock).

Cercopithecus kolbi hindei Pocock, Proc. Zool. Soc. Lond., 1907, p. 703, pl. XXXIX, fig. 3.

Type locality. Tutla, Kenia district. Altitude 8,000 feet. Type in British Museum.

Geogr. Distr. Tutla, Kenia district, and Lake Naivasha, British East Africa.

Genl. Char. Head and cheeks tinged with reddish yellow; ear tufts yellowish, annulated; lumbar and sacral regions rusty red; sides of body yellow speckled.

Color. Fore part of head, hairs banded with black and ochraceous; long, stiff, black hairs standing upward and outward from edge of forehead; back of head and hind neck blacker, the hairs banded with black and ochraceous, the black predominating, just as the ochraceous predominates on fore part of head; sides of head, hairs long, banded with black and buff, paler than head; broad white collar on both sides of neck not meeting on back and gradually lost in white of chest; fur below collar on upper back, much worn in places, purplish black, hairs banded with black, white and ochraceous; rest of upper parts speckled with burnt sienna and black, this color extending over the flanks; arms and hands black, above elbows speckled with white; legs blackish gray white speckled; chin, throat and upper part of the breast buffy white; chest to lower part of abdomen gray faintly speckled with white, as are also the hairs on the chest; hairs across pubic region buff; inner side of thighs, and upper parts buffy white; pubic spot ferruginous; feet black; tail at base burnt sienna and black like back, remaining part black ticketed with white, except on a few inches from tip; ear tufts on fore part of ear yellowish white, on hinder part buff not banded. Mr. Pocock states that the tufts are banded, but it did not appear to me that they were. The tufts exist only on one ear, and there is a break on the one remaining, the two parts being of different colors, and all the hairs composing them were unicolor. Ex type British Museum.

Measurements. Total length, 1,250; tail, 690; foot, 120, (skin). Skull: total length, 105.2; occipito-nasal length, 92.6; intertemporal width, 43.4; Hensel, 67.7; zygomatic width, 70.1; width of braincase, 58.6; median length of nasals, 19.3; palatal length, 33.8; length of upper molar series, 28; length of upper canines, 20, not fully cut; length of mandible, 72; length of lower molar series, 33.6. Ex type British Museum.

The specimen is a young adult, and the lower canines have a pronounced cusp posteriorly at their base.

A specimen of this form of L. KOLBI was procured by the Smithsonian African Expedition from Lake Naivasha, British East Africa, elevation, 8,000 feet.

LASIOPYGA ALBIGULARIS (Sykes).

Semnopithecus albogularis Sykes, Proc. Zool. Soc. Lond., 1831, p. 106.

Cercopithecus albigularis Sykes, Proc. Zool. Soc. Lond., 1832, p. 18; Martin, Mammif. Anim., 1841, p. 512; Fras., Zool. Typ., 1848, pl. II; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 45;

Reichenb., Vollständ. Naturg. Affen, 1862, p. 112, fig. 279; Gray, Proc. Zool. Soc. Lond., 1868, p. 182; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 24; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 79; Anders., Cat. Mamm. Ind. Mus. Calc., 1881, p. 57; True., Proc. U. S. Nat. Mus., XV, 1893, p. 448; Sclat., Proc. Zool. Soc. Lond., 1893, pp. 251, 506, 691; Matschie, Sitzungsb. Natur. Freunde, Berlin, 1893, p. 215; Thos., Proc. Zool. Soc. Lond., 1894, p. 137; 1896, p. 789; 1900, p. 179; Forbes, Handb. Primates, II, 1894, p. 67; W. L. Sclat., Mamm. S. Africa, 1900, I, p. 12; Major, Proc. Zool. Soc. Lond., 1901, p. 149, pl. XI, fig. 5; Thos. and Schw., Proc. Zool. Soc. Lond., 1906, p. 586; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 700.

Semnopithecus albigularis Less., Spec. Mamm., 1840, p. 64.

Cercopithecus monoides I. Geoff., Archiv. Mus. Hist. Nat., Paris, II, 1843, p. 558, pl. XXXI; *Id.* Dict. Hist. Nat., III, 1849, p. 303; *Id.* Cat. Primates, 1851, p. 19; Dahlb., Stud. Zool. Fam. Reg. Anim. Nat., fasc. I, 1856, pp. 103, 107; Reichenb., Vollständ. Naturg. Affen, 1862, p. 112, fig. 282; Sclat., Proc. Zool. Soc. Lond., 1893, p. 256; Matschie, Sitzungsb. Gesell. Naturg. Freunde, Berlin, 1893, p. 214.

Cercopithecus erythrarchus Peters, Reis. Mossamb., Säugth., 1852, p. 1, pl. I, juv.; Reichenb., Vollständ. Naturg. Affen, 1862, p. 3, fig. 277; Kirk, Proc. Zool. Soc. Lond., 1864, p. 649; Reuvens, Zool. Gart., XXX, 1889, p. 207; Noack, Zool. Jahrb., II, 1889, p. 289; Oudem., Zool. Gart., XXXI, 1890, p. 267; Sclat., Proc. Zool. Soc. Lond., 1893, p. 249.

WHITE-THROATED GUENON.

Type locality. Madagascar? Specimen purchased alive in Bombay, India.

Geogr. Distr. East and West Africa; Quilimane, Luabo, Zambesi, (Kirk); Blantyre, Shire Highlands, (Johnston); Mombassa, (Remington); Chiradzula Mts., Nairobi forest, (O. Thomas); Milanji Plateau, 3,500 feet, and Fort Lister, Milanji, 6,000 feet, (Pocock); Nyassaland, (O. Thomas); Mashonaland, (W. L. Sclater); northeast Transvaal, Woodbush, Drakenberg Range, 30 miles north-east of Pietersburg, (Thomas and Schwann); Umtalie, main east shore of Lake Shirwa, (A. Sharpe); east coast to the Gold Coast, (Pel).

Color. Male. Top of head and back of neck speckled black and buff; back between shoulders speckled black and white; cheeks and sides of neck cream buff speckled with black, back of head darker than the other parts; the white and black speckling of the upper back grades into ochraceous and black on middle of back, and continues to tail and flanks; arms and hands black; the inner side of arms from shoulders to elbow gray, speckled with black; on the arms near shoulders, and fore arms near elbow there is a little white speckling; chin and throat buffy white; under parts of body gray, black speckled; anal region and inner side of thighs, whitish; rest of thighs and legs below knees very dark gray, speckled with white; feet jet black; tail iron gray at base, remainder jet black. Ex specimen from Fort Lister, Milanji, 6,000 feet, British Museum.

Female. Resembles the male in most particulars, but has the root of the tail and sides of the callosities rusty red. The young also exhibit the rusty red at root of tail, and a tinge of the same color on thighs, and the under parts of body grayish white without speckling, thus differing considerably from the adults.

Measurements. Total length, 1,500; tail, 830; foot, 150. Skull: total length, 126; occipito-nasal length, 98.6; intertemporal width, 44.7; Hensel, 88.8; zygomatic width, 80.8; width of braincase, 62; median length of nasals, 2; palatal length, 46.8; length of upper molar series, 29.5; length of mandible, 87; length of lower molar series, 37.8; length of upper canines, 27.5.

Specimens of the true L. ALBIGULARIS from a number of places are in the Collection of the British Museum varying but little from the typical style. The type was purchased alive in Bombay, and was said to have come from Madagascar, and probably did come from some part of East Africa, and if this supposition is correct, the monkeys of this species from the East African coast would represent the typical style. The species is found across the continent from the east coast to the Gold Coast, on the west (Pel) and from Nyassaland to the Transvaal.

The type of *L. erythrarchus* Peters, is in the Berlin Museum. It came from Inhambane, south of the Zambesi, and is a young animal not separable from L. ALBIGULARIS. The type of *L. monoides* I. Geoff., is in the Paris Museum and exactly resembles L. ALBIGULARIS, in fact there is no difference whatever in their appearance. Unfortunately the skull is in the specimen, so no comparison could be made.

According to Grant, as quoted by Thomas and Schwann (l. c.) in the Drakenberg Range, north east Transvaal, this monkey is "common, but difficult to obtain on account of its wariness. It inhabits the deep kloofs in the depths of the forest, seldom visiting the open parts."

Lasiopyga albigularis beirensis (Pocock).

Cercopithecus albogularis beirensis Pocock, Proc. Zool. Soc. Lond., 1907, p. 701; Thos. and Wrought., Proc. Zool. Soc. Lond., 1907, p. 776; 1908, p. 165.

beira guenon. Native name *Naimbo*.

Type locality. Beira, Southeast Africa. Type in British Museum.

Genl. Char. Rump and root of tail reddish bronze; no red on head, under parts whitish.

Color. Similar to L. albigularis, but top of head paler, speckled yellow and black; lower back also lighter, a speckled cream buff and black; a tinge of reddish orange on rump, the rest of the tail above and beneath, and the parts adjacent are reddish orange; under side of arms to elbows, and of thighs to ankles, and entire under parts whitish, unspeckled. Ex type British Museum.

Measurements. Total length, 1,162; tail, 601; foot, 172; ear, 40, (Collector). Skull: total length, 117.6; occipito-nasal length, 96.2; intertemporal width, 44; Hensel, 82.1; zygomatic width, 75.7; width of braincase, 56.5; median length of nasals, 18.6; palatal length, 40.2; length of upper molar series, 26.6; length of upper canines, 23.7; length of mandible, 79.8; length of lower molar series, 31.7. Ex type British Museum.

This race, while closely resembling L. albigularis in its general style of coloration, is readily distinguished from that species by the reddish orange hairs on root of tail and adjacent parts, as well as by the unspeckled whitish under parts, and inner side of limbs.

According to Grant as quoted by Thomas (l. c.) this species was "very common in the forest of the Pungwe River District, to which they are confined, and often observed in very large troops. At first they were tame, and specimens were easily obtainable, but they soon became wild, and after a few weeks were seldom seen. They live on wild fruits, young shoots of trees, etc., and seldom damage the native crops."

Lasiopyga albigularis kibonotensis (Lönnberg).

Cercopithecus albogularis kibonotensis Lönnb., Exped. Kilimanjaro-Mweru, Mamm.

Type locality. Kibonoto, Mt. Kilimanjaro.

Color. "In all the specimens from Kilimandjaro the hairs of the head and nape are black and ringed with yellow. In some larger and stronger specimens this yellow might be termed reddish yellow, and in all it is decidedly yellow not 'gray.' On the hind neck the rings are paler (than albigularis, with which it is compared), more whitish. Shoulders and arms are wholly black in the Kilimandjaro monkeys, except that the inner side of the upper arm is more or less ashy gray, but the fore arm is intensely black, not specklel as in the typical *albigularis* according to Pocock. The legs are black, speckled with ash gray. Red hairs at the root of the tail, and in the ischiopubic region, are found in all ages and both sexes, but less in the adult male than in others. Chin and throat white, (in younger specimens with soft wavy hairs); on the sides of the neck this white area passes into a broad iron gray speckled collar, which, however, leaves a broad dark band on the hind neck free, and with its black hairs sparingly ringed with whitish or pale yellow, contrasting against the iron gray collar. The white of the throat does not extend to the inside of the upper arm as in the typical form, according to Pocock, and it is rather sharply defined from the gray ventral surface. On the back the reddish yellow is quite dominating on the lumbar and sacral regions, and from there extending more or less forward, and on the tail, flanks, etc."

"The differences, although slight, appear to indicate a separate geographic race or subspecies, which I name after the type locality Kibonoto."

The above is the description given by the Author. From his quoting Pocock's description of *L. albigularis* and comparing his specimen with that only, it is to be inferred that he has no personal knowledge of that species and therefore is not able to speak with any certainty as to whether his examples are really different or not. L. ALBIGULARIS has a very wide range and although it may not have been stated before to be a resident of Kilimanjaro, it has been taken in rather close proximity, such as the Nairobi forest, etc. It is difficult to ascertain, from the rather unsatisfactory description, whether this Kilimanjaro monkey is even subspecifically distinct from L. ALBIGULARIS, but, not having seen it, I leave it with the rank its describer gave it. Unfortunately no mention was made of the measurements, or characters of skull or teeth. Herr Lönnberg gives the following short account of the animal: "This monkey is, according to Sjostedt, very common even in the rain forest. It lived in greater or small bands in dense forests in groups of trees and in the farms, and similar localities. When caught they remain wild for a long time and are difficult to tame, as they keep their angry disposition and are unreliable. They are caught by the Wadshaggas in a kind of basket densely made of twigs and put in traps by sticks. These were placed on the ground in the farms where the monkeys lived and made heavy by stones put on them."

Lasiopyga albigularis rufilata (Pocock).

Cercopithecus albigularis rufilatus Pocock, Proc. Zool. Soc. Lond., 1907, p. 702.

Type locality. Rufiji River, south of Zanzibar. Type in British Museum.

Genl. Char. Like L. albigularis, but back and behind shoulders reddish orange yellow; no distinct white collar.

Color. Head and face to nose speckled cream buff and black; dorsal area between shoulders speckled black and white; rest of upper parts reddish orange and black speckled; flanks slightly paler; outer side of arms black speckled with white above elbow; hands black; outer side of legs dark gray speckled with white; chin and throat buffy white; under parts of body smoky gray speckled with white; inner side of thighs buffy, unspeckled; feet black; tail like back at root, remainder jet black. Ex type British Museum.

Measurements. Total length, 1,870; tail 770. Skull: total length, 101.8; occipito-nasal length, 80.8; intertemporal width, 38; Hensel, 70.3; zygomatic width, 67.5; width of braincase, 54; median length of nasals, 19.1; palatal length, 25.7; length of upper molar series, 24.2; length of upper canines, 16.5; length of mandible, 75.5; length of lower molar series, 30.7. Ex type British Museum.

This race is very close to the Nyassaland example, the only difference to be seen between them is that the Rufiji River specimens are a little darker on the back, more reddish.

Lasiopyga moloneyi (Sclater).

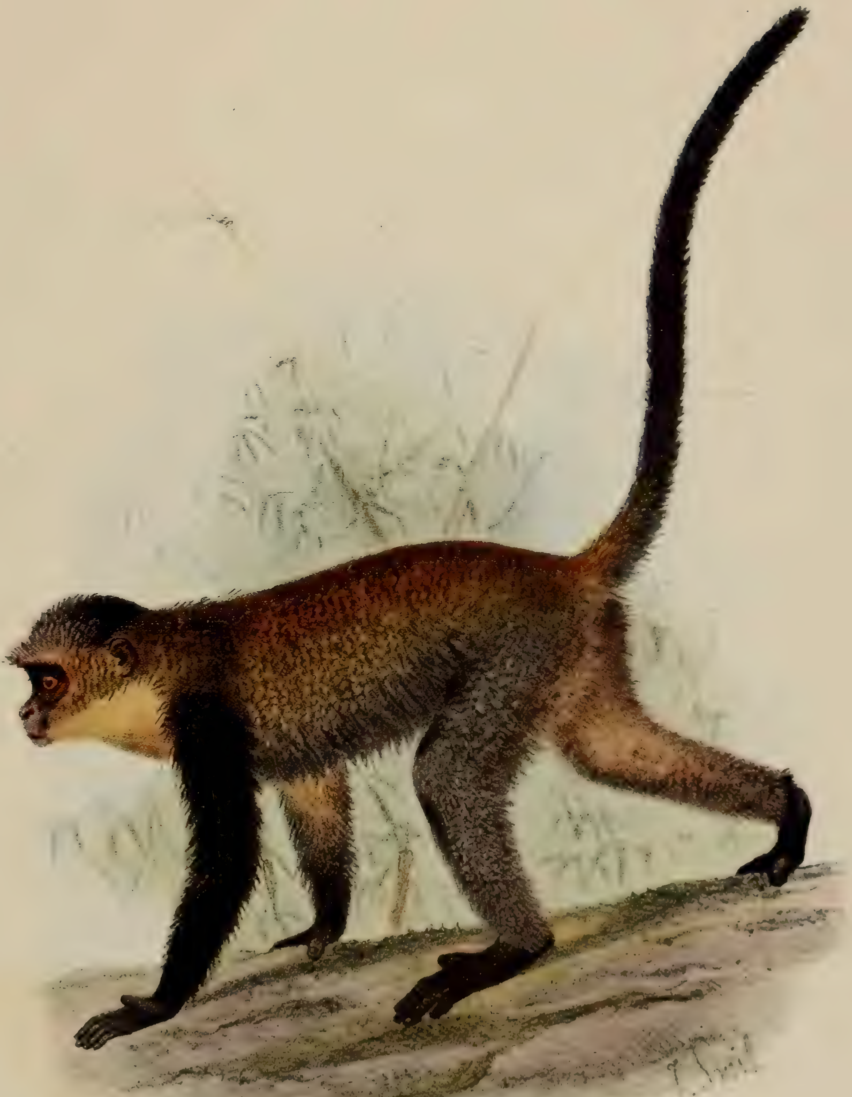
Cercopithecus moloneyi Sclat., Proc. Zool. Soc. Lond., 1893, p. 252, pl. XVII; Forbes, Handb. Primates, II, 1895, p. 74; Thos., Proc. Zool. Soc. Lond., 1896, p. 789; 1897, p. 927; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 704.

MOLONEY'S GUENON.

Type locality. Karonga, north end of Lake Nyassa, Portuguese East Africa.

Geogr. Distr. Masuku Plateau, (A. Whyte); Nyassa-Tanganyika Plateau, (J. B. Yule); Nyassaland, Portuguese East Africa.

Color. White band on the forehead over eyes mixed with black



LASIOPYGA MOLONEYI

hairs; top of head black speckled with buff; cheeks and sides of head speckled with white and black; upper part of back grayish white speckled black and white, darker than cheeks; rest of upper parts reddish chestnut, the edges towards thighs lighter, a pale ochraceous rufous; flanks paler than upper back speckled with gray and black; shoulders and outer side of arms above elbow, and entire forearms and hands, black; inner side of arms above elbows, gray; chin and throat soiled white; entire under parts and inner side of thighs gray, speckled with black; legs gray, white speckled; feet black; tail iron gray at base, some reddish hairs at root, remainder jet black; ears with yellowish white tufts.

Measurements. Total length, 1,520; tail, 770; foot, 160. Skull: total length, 120; occipito-nasal length, 98.6; intertemporal width, 43.2; Hensel, 82.5; zygomatic width, 79.5; width of braincase, 58.9; median length of nasals, 19.6; palatal length, 43.5; length of upper molar series, 27.1; length of upper canines, 16.5; length of mandible, 86.5; length of lower molar series, 31.6.

LASIOPYGA FRANCESCÆ (Thomas).

Cercopithecus francescæ Thos., Ann. Mag. Nat. Hist., X, 1902, 7th Ser., p. 243; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 706.

Type locality. Near Mt. Waller, western side of Lake Nyassa, high plateau. Type in British Museum.

Genl. Char. Similar to L. PREUSSI; color of body darker and grayer.

Color. Head, nape, shoulders, flanks and hips, dark blackish gray finely grizzled with whitish; hairs along back dark slaty gray at base, then narrowly ringed with yellow, and banded with black and white; inner border of ears bright reddish; neck patch white, illy defined; elbows and knees black above; under parts dark gray with a few white rings; tail like back at base, remainder dull black, speckled a short distance from root with white. Ex type British Museum.

Measurements. Type. Total length, 1,070; tail, 620. No skull.

The type is an imperfect skin without skull or limbs below elbows and knees. It resembles somewhat L. PREUSSI, but is blacker on head, neck and shoulders, much paler on under parts, and lower back inclining more to yellow than red, quite a different coloring from L. PREUSSI. The habitats of the two species are widely separated by the extent of a continent, Lake Nyassa, and Cameroon.

Lasiopyga preussi (Matschie).

Cercopithecus preussi Matschie, Sitzungsb. Gesell. Naturf. Freunde, 1898, p. 76; Thos., Proc. Zool. Soc. Lond., 1904, p. 186; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 706.

Cercopithecus crossi Forbes, Nature, LXXII, 1905, p. 630.

Type locality. Buea, Cameroon, West Africa. Type in Berlin Museum.

Genl. Char. Back very dark; shoulders and thighs speckled; nose black.

Color. Top and sides of head, neck, shoulders and thighs black, hairs tipped with white; back and sides grizzled cinnamon and black speckled; forearms, legs, hands and feet black; chin and throat white; under parts black, hairs tipped with white; tail at root like back, rest of upper parts black, all but apical portion speckled with white, beneath for two thirds the length iron gray, remainder black; face below eyes whitish, nose black. Ex type Berlin Museum.

Measurements. Total length, 1,040; tail, 535. Skull: total length, 97; occipito-nasal length, 83; intertemporal width, 40; Hensel, 63; zygomatic width, 64; median length of nasals, 18; length of upper molar series, 23; length of mandible, 64; length of lower molar series, 27. Ex type Berlin Museum.

This is a dark handsome species of subdued coloring, the conspicuous part being the grizzled cinnamon back.

Lasiopyga preussi insularis (Thomas).

Cercopithecus preussi insularis Thos., Ann. Mag. Nat. Hist., 8th Ser., V, 1910, p. 191.

Type locality. N. Bantabiri, Island of Fernando Po, West Africa.

Genl. Char. Like L. preussi but darker.

Color. Hairs on upper parts blackish slate at their bases for over half their length, then ringed with dull buffy and tipped broadly with black. Tail at root chestnut. Young female. No dimensions given.

It can hardy be considered that the subspecific distinctness of a Fernando Po race, has as yet been well established, the material, one immature female, being hardly sufficient. An examination of additional adult examples is desirable.

Lasiopyga thomasi (Matschie).

Cercopithecus thomasi Matschie, Sitzungsb. Ges. Naturf. Freunde, Berlin, 1905, p. 262.

Cercopithecus l'hoesti thomasi Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 715.

Type locality. Lake Kivu, between Lakes Albert Edward, and Tanganyika. Type in Berlin Museum.

Genl. Char. Root of tail gray; no speckling on limbs, nose black.

Color. Top of head, neck, shoulders and flanks black, hairs ringed with white; dorsal region tawny ochraceous to burnt sienna, the hairs being purplish gray on basal half, then ringed with black and tawny ochraceous, or burnt sienna tipped with the latter hue; shoulders, limbs, hands, feet, and under parts jet black; chin black; sides of head, neck, and throat to upper part of chest, white; face below eyes covered with whitish hairs; nose black. Ex type in Berlin Museum.

Measurements. Total length, 1,000; tail, 480. Skull: total length, 90; occipito-nasal length, 82; Hensel, 50; intertemporal width, 40; zygomatic width, 60; median length of nasals, 13; length of upper molar series, 16; length of mandible, 55; length of lower molar series, 25. Ex type Berlin Museum.

The skull is that of quite a young animal, the adult's would of course be of larger dimensions.

Very like L. PREUSSI, but the back is lighter and the shoulders and limbs are uniformly black, and the tail a lighter gray.

LASIOPYGA KANDTI (Matschie).

Cercopithecus kandti Matschie, Sitzungsb. Gesell. Naturf. Freunde, 1905, p. 264; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 695.

Type locality. Lake Kivu, between Lakes Tanganyika and Albert Edward. Type in Berlin Museum.

Color. Top of head, and back of neck to between shoulders black; hairs between shoulders tipped with ochraceous buff; sides of head, neck and throat, with the hairs purplish gray at base then ringed with black and buff, giving a speckled appearance; band across shoulders, chest, and arms black; body from shoulders to hips speckled buff yellow, the hairs being buff at base, then ringed with black and buff yellow; front edge of thighs reddish; thighs black, hairs tipped with buff, a spot above knee only, clear black; hinder edge of thighs ochraceous rufous, becoming purplish red beneath tail; under parts darker than upper parts, with a reddish tinge; tail at base like back, remainder black, hairs tipped with white, these becoming fewer towards tip which is nearly pure black. Ex type Berlin Museum.

Measurements. Body and head about 680; tail to end of hairs, 845. No skull. Ex type Berlin Museum.

The type is a mutilated skin with the fore part of head and lower part of arms and legs absent. It is an exceedingly handsome animal; distinct from all others of the genus.

LASIOPYGA INSIGNIS (Elliot).

Cercopithecus insignis Elliot, Ann. Mag. Nat. Hist., IV, 1909, 8th Ser., p. 274.

ORANGE-COLORED GUENON.

Type locality. Congo forest, Central Africa. Type in Garden Royal Zool. Society, Antwerp, Belgium.

Genl. Char. Fur long, loose, rather fluffy; tail long; colors bright.

Color. Broad brow band, cheeks and whiskers, the latter bushy and reaching behind ears, yellow; face blackish; nose bluish white; lips covered with white hairs; chin and upper part of throat white; top of head to nape, band across back to base of neck, shoulders, arms, hands, front of thighs from hips over knees and feet black; entire upper parts from black back band to tail, flanks and under parts from throat to vent, and inner side of thighs dark orange; tail at base reddish brown grading into black on apical half.

Unique type living in the Royal Zoological Gardens at Antwerp, Belgium, 1909.

LASIOPYGA STAIRSI (Sclater).

Cercopithecus stairsi Sclat., Proc. Zool. Soc. Lond., 1892, p. 580, pl. XL; 1893, pp. 252, 443, 612; Forbes, Handb. Primates, II, 1894, p. 73; Pocock, Proc. Zool. Soc. Lond., II, 1907, p. 706.

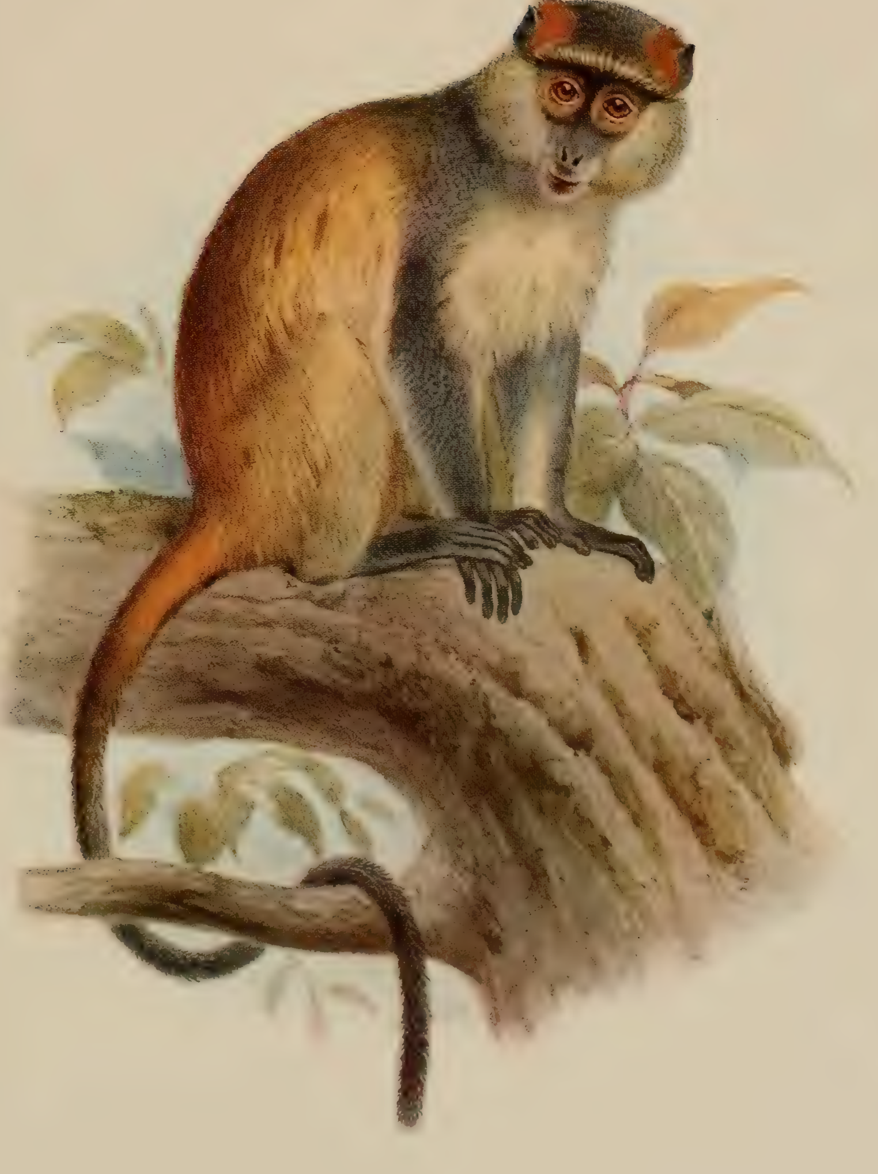
STAIRS' GUENON.

Type locality. Delta of the Zambesi.

Geogr. Distr. Zambesi Delta, Mozambique, East Africa.

Genl. Char. Auricular region chestnut.

Color. Eyelids white, face black about eyes where it is bare, lips covered with short white hairs; cheeks and side of head, hairs long, inclined backwards, speckled yellowish green; top of head speckled buff yellow and black; hairs on forehead long, upright, speckled Naples yellow and black, some stiff black hairs mixed with the rest and usually much the longest; sides of head in front of and over ears chestnut, unicolor; occipital region, hairs chestnut banded with ochraceous buff; lower hind neck, and upper back and shoulders speckled yellow and black, the entire surface with a greenish tinge; dorsal line ochraceous



Lasiopyga stairsi

fading into ochraceous buff on lower rump, where there is a strong orange buff tinge; all hairs below upper back without annulations; sides of body buff yellow; outer side of arms and hands speckled black and white; outer side of thighs ashy gray, with a faint reddish tinge; feet silver gray; chin, throat, inner side of limbs, and entire under parts yellowish white; tail at base above, and beneath like rump; remainder dark gray with a brownish tinge or silvery according to the light; beneath silvery white. Ear apparently flesh color in the center, black on outer edge. Ex type British Museum.

Measurements. Head and body, 440; tail, imperfect, 330; foot, 100, (skin). Skull: total length, 114.5; occipito-nasal length, 75.9; Hensel, 87.3; intertemporal width, 43.2; zygomatic width, 77.8; width of braincase, 55; median length of nasals, 18.4; palatal length, 44.6; length of upper tooth row, 26; length of mandible, 85; length of lower molar series, 33.5. Skull of an apparently adult male. Ex type British Museum.

The type specimen is a young female, with the last two molars in each jaw not having yet made their appearance. The coloring of the fur and its distribution is the same in both adult and young, as may be gathered from the few specimens of different ages obtained thus far, but I have not seen an old individual. It is a handsome monkey and a very distinct species.

LASIOPYGA STAIRSI MOSSAMBICUS (Pocock).

Cercopithecus stairsi Sclat., Proc. Zool. Soc. Lond., 1893, p. 612; Forbes, Handb. Primates, II, 1894, (Part.).

Cercopithecus stairsi mossambicus Pocock, Proc. Zool. Soc. Lond., 1907, p. 705.

Type locality. Mozambique. Type in British Museum.

Genl. Char. Like L. STAIRSI, but red on head, a patch above and in front of ear only; hairs on thighs and back speckled.

Color. Very like L. STAIRSI, but the red on the head is confined to a patch above and in front of the ear; upper parts and flanks are speckled with black and yellow; unicolor hairs only appearing with the red ones at the root of the tail, where this color extends quite across the rump, and on to the base of the tail; the arms are black, speckled with white on outer side, inner side grayish white only on forearms to just below elbows; hands black; legs grizzled iron gray, thus differing from the unicolor thighs of L. STAIRSI. Under parts of body and thighs grayish white; tail, (only about nine inches remaining beyond the red at base), is speckled black and buff; forehead covered with long hairs banded with black and white, or black and buff; top of head speckled yellow and black, yellow predominating. Ex type British Museum.

Measurements. Head and body, 610; tail imperfect; foot, 125, (skin).

Compared with L. STAIRSI, the type of *L. s. mossambicus* is a very much older animal, and a male. It is an open question whether L. STAIRSI male, equally adult, would not change the coloring as regards the speckling on back, and color of the speckling of thighs, which comprise the principal differences.

The type of L. STAIRSI is a baby, and some of its hair, like that on the tail, is little better than down. It will be necessary to have old adults of both forms to compare, before it can be definitely determined that they are distinct.

LASIOPYGA RUFITINCTA (Pocock).

Cercopithecus rufotinctus Pocock, Proc. Zool. Soc. Lond., 1907, p. 706.

Cercopithecus stairsi Sclat., Proc. Zool. Soc. Lond., 1907, p. 706.

Type locality. British East Africa. (Mombassa?).

Genl. Char. Top of head reddish, and cheeks washed with same.

Color. Forehead, and top and sides of head before ears, speckled tawny ochraceous and black, giving to this part of the head a reddish appearance; cheeks, and sides of head to beneath ears gray tinged with red; hind neck and upper part of back, speckled black and yellow, grading on to dorsal region into ochraceous rufous banded with black, the annulations disappearing at root of tail, where the color deepens to burnt sienna; shoulders black speckled with white, and extending on arms nearly to elbows; forearms also black with a slight sprinkling of white along the inner edge; outer side of legs iron gray, grizzled; lips covered with short white hairs; chin, throat, chest, under parts and inner side of limbs, grayish white; flanks speckled pale yellow and black; hands jet black; feet black, speckled with white; tail at base burnt sienna like lower rump, grading into grizzled buff and black, and then to black speckled with white. The tail is imperfect, 330 mm. long, probably half of the length gone. Ex type British Museum.

Measurements. Head and body, 410; foot, 100, (skin).

This monkey is next to *L. s. mossambicus*, but is redder on head and dorsal region. Its locality is farther from that form than is that of L. STAIRSI, indeed the habitats of that species, and of *L. s. mossambicus* are rather too near together to admit of two closely allied forms as distinct. *L. rufitincta* is the handsomest of the three, and an adult male must be a fine animal. The type is about half grown.

LASIOPYGA LABIATA (I. Geoffroy).

Cercopithecus labiatus I. Geoff., Compt. Rend., XV, 1842, p. 1038; *Id.* Archiv. Mus. Hist. Nat., Paris, II, 1843, p. 555; *Id.* Dict. Hist. Nat., III, 1849, p. 302; *Id.* Cat. Primates, 1851, p. 20; Sclat., Proc. Zool. Soc. Lond., 1893, p. 256; Matschie, Sitzungsb. Gesell. Naturf. Freunde, Berlin, 1893, p. 214; Forbes, Handb. Primates, II, 1894, p. 72; Pocock, Proc. Zool. Soc. Lond., 1907, p. 707.

Cercopithecus samango Sundev., Ofv. K. Vet. Akad. Förh. Stockh., I, 1844, p. 160; Peters, Reis. Mossamb., Säugth., 1852, p. 4; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 44; Dahlb., Stud. Zool. Fam. Reg. Anim. Nat., fasc., I, 1856, pp. 103, 107; Reichenb., Vollständ. Naturg. Affen, 1862, p. 110; Gray, Proc. Zool. Soc. Lond., 1868, p. 182; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 24; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 79; Sclat., Proc. Zool. Soc. Lond., 1893, p. 256; Forbes, Handb. Primates, II, 1894, p. 71; W. L. Sclat., Mamm. S. Afr., I, 1900, pp. 7, 11.

SAMANGO GUENON.

Type locality. South Africa. Type in Paris Museum.

Geogr. Distr. Eastern part of Cape Colony, King Williamstown District, ranging along east coast through Natal and Zululand to Inhambane; also Port St. John in Pongoland, (W. L. Sclater); Angola, (Peters).

Color. Forehead and top of head black speckled with buff; sides of face and neck dark gray speckled with yellowish white; shoulders and upper back black and white speckled; rest of upper parts and flanks pale gray, banded with cream color and black; outer side of forearms, hands and feet, black; outer side of legs grizzled gray and black; chin, throat, under parts, and inner side of limbs grayish white; tail above on basal third gray, a slight tinge of red on hairs at root above and below, beneath on basal third yellowish white, remainder jet black all around. Ex type Paris Museum.

Measurements. Total length, 1,244.6; tail, 685.8; foot, 127.

Subgenus 8. Pogonocebus.

The members of this group are brightly colored, and noted for having a white and buff diagonal stripe across the thighs from the root of the tail.

KEY TO THE SPECIES.

A. Stripe across thighs.
  a. Ochraceous rufous band across forehead.
    a.' Upper parts speckled tawny ochraceous and black ....*L. neglecta.*
    b.' Upper parts speckled white and black, tail black ....*L. brazzæ.*
  b. Black band across forehead succeeded by a white one.
    a.' Inner side of thighs and anal region bright bay ....*L. diana.*
    b.' Inner side of thighs and anal region white or pale orange ....*L. roloway.*

Lasiopyga neglecta (Schlegel).

Cercopithecus leucampyx (nec Fischer), Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 22; ex White Nile.

Cercopithecus neglectus Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 70; Giglioli, Zool. Anz., X, 1887, p. 510; Sclat., Proc. Zool. Soc. Lond., 1893, pp. 253, 443, (in text of C. BRAZZÆ); Forbes, Handb. Primates, II, 1894, p. 75; Thos., Proc. Zool. Soc. Lond., 1900, p. 801.

SCHLEGEL'S GUENON.

Type locality. White Nile. Locality unknown. Type in British Museum.

Geogr. Distr. White Nile, Africa.

Color. Head and feet lacking. A black front band at end of the flat skin, presumably hind portion of head; neck, shoulders and space between, tawny, ochraceous and black, basal portion of hairs ochraceous; rest of upper parts, hairs brown and black, base of hairs gray; skin of throat wanting; under parts ochraceous buff and black, growing darker to middle of abdomen, which is brownish black; arms apparently black, only a small portion remaining; thighs seal brown on outer edge, remaining portion speckled buff and tawny ochraceous. with a bright buff band crossing at base of tail; inner side of thighs buff; tail at root speckled, hair brown and black, remainder jet black. Ex specimen from the White Nile, (Petherick); Schlegel's type of L. NEGLECTA, British Museum.

In coloration this type is as different from what is ordinarily considered to be L. NEGLECTA as can be conceived. It has none of the gray color about it, and the general tint is more brown than any shade of gray. Dr. Gray described it as gray brown, but the gray on basal part of the hairs does not show through, and affects in no appreciable degree the general hue of the pelage. There are examples of so-called *L. neglecta* in the British Museum from the Omo River, the Charada forest and Kaffa, north of Lake Rudolf in the east, to the French Congo, and the Ja River in Cameroon, but none of them agree in color with the type, although they do with each other. Unless a gray LASIOPYGA is obtained on the White Nile, to prove that the type of L. NEGLECTA represents a stage of pelage unknown in so-called *neglecta* from other parts of Africa, it would seem that the only proper way will be, in the future, to restrict the name NEGLECTA to this White Nile form, and the name for the gray animal would be L. BRAZZÆ, conferred by A. Milne-Edwards upon the gray monkey from the Upper Congo, for it is impossible to recognize that form from a correct description of the type of L. NEGLECTA. Mr. Pocock in his paper on *Cercopithecus,* (LASIOPYGA), speaks of this type of Schlegel's among other examples from the Omo River and Kaffa, as the "typical form," but nowhere refers to it as *The* type of the species, and by uniting it to the examples from other localities, brings together individuals as different in coloring as can be imagined.

I have not been able to find any skull belonging to the type. There is a young specimen of LASIOPYGA in the British Museum, presumably from the Welle River, procured by the Alexander and Gosling Expedition, which differs in color from all others and may be described as follows:

Over each eye is a short black line composed of stiff hairs, and between these and over the nose is a cream buff line of short hairs; across the forehead is a band, broadest in the middle, ochraceous rufous; rest of head above speckled black and cream buff, base of hairs purplish gray; sides of head and face speckled gray and yellow, the latter predominating; upper parts of body gray, speckled with brown and pale yellow; rump purplish gray; outer side of thighs purplish gray like the rump, with a narrow cinnamon rufous, or hazel band covering the upper part to root of tail; outer side of arms black to wrists; hands sooty; feet yellowish gray; entire under parts, and inner side of limbs white; upper edge of thigh from above knee, black speckled with buff; tail at base cinnamon rufous like band on thighs, remainder brownish black. It will be readily seen that in many ways this example differs from both NEGLECTA and BRAZZÆ. There is no black line on head behind the ochraceous rufous one, there is no clear gray and black on the upper parts; the band across thigh is cinnamon rufous, not white nor buff; and the back of the tail is like the thigh band, not like the upper parts, and the entire under parts are white. The animal has been kept in captivity, the hair about the loins being worn by the chain or rope which held it.

It is desirable to obtain adults from this district when the proper specific standing of the animal could be accurately ascertained, but there have been already too many names given to half grown captive specimens, a practice more fruitful in creating confusion than producing valid species, therefore I merely desire to draw attention to this example.

LASIOPYGA BRAZZÆ (A. Milne-Edwards).

Cercopithecus brazzæ A. Milne-Edwards, Rev. Scient., XII, 1886, p. 15; Sclat., Proc. Zool. Soc. Lond., 1893, pp. 255, 443, pl. XXXII; Forbes, Handb. Primates, II, 1895, p. 81; Pousarg., Ann. Scien. Nat. Paris, III, 1896, 7me Sér., p. 216.

Cercopithecus neglectus (nec Schleg.), Elliot, Cat. Mamm. Field Columb. Mus., F. C. M. Pub., VIII, 1906, p. 569, Zool. Ser.

Cercopithecus neglectus brazziformis Pocock, Proc. Zool. Soc. Lond., 1907, p. 687.

Cercopithecus neglectus (nec Schleg.), Pocock, Proc. Zool. Soc. Lond., II, 1907, pp. 685, 686, figs. 180, 181.

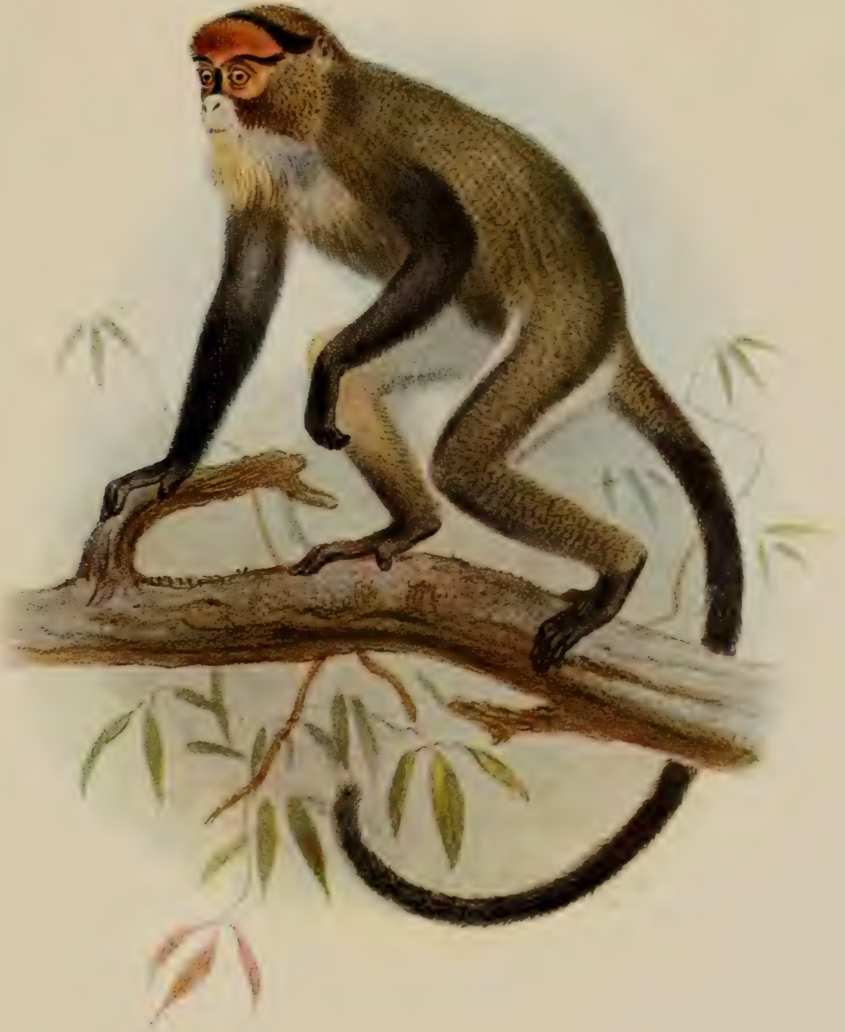
Cercopithecus ezræ Pocock, Proc. Zool. Soc. Lond., 1908, p. 158, pl. X, fig. 2, juv.

DE BRAZZA'S GUENON.

Type locality. French Congo, West Africa. Type in Paris Museum.

Geogr. Distr. French Congo to Cameroon, West Africa.

Color. Ochraceous rufous band across forehead broadest in the center, succeeded by a broad black band which extends to the ears on sides of head; rest of head above and on sides, neck, shoulders, upper part and sides of body, and upper part of thighs, with the hairs



LASIOPYGA BRAZZÆ

ringed with black and white, giving a gray appearance speckled with white; a narrow white stripe across thigh from knee; black patch over knee; thigh below white line, and hind part of leg, blackish gray; front part of leg grizzled gray; a black line bordered outwardly by a yellowish white line from shoulders to below elbows; forearms from just above elbows, hands and feet above ankles, black; space around eyes, and upper part of nose black; tip of nose, lips, sides of under jaw, chin, beard and throat, white; chest and abdomen black; tail like back at root, rest black. Ex type in Paris Museum.

Measurements. Total length, 1,295.4; tail, 685.8; foot, 171.4. Skull: total length, 116; occipito-nasal length, 97; Hensel, 80; zygomatic width, 79; intertemporal width, 46; palatal length, 44; breadth of braincase, 61; median length of nasals, 23; length of upper molar series, 27; length of mandible, 81; length of lower molar series, 35.

In his paper on Cercopithecus, (Lasiopyga), Mr. Pocock separates a specimen from the French Congo, as *L. n. brazziformis,* on account of the legs to ankles being a pale grayish green instead of a blackish olive. In the series obtained by Mr. Bates on the River Ja, in Cameroon, and all of which Mr. Pocock states he could not distinguish specifically from his *L. neglecta,* (L. brazzæ), is an example with legs colored precisely like the one from the French Congo. This last is not sexed, but the one from Cameroon is marked female. It may be possible that the color of the legs may be attributed to sex, but the fact that both styles of coloring were found in individuals taken in the same place in Cameroon, would indicate that the difference in hue in the legs was not a specific character, but must be attributed to some other cause, such as age or sex, or possibly to individual variation. I have therefore placed *brazzæformis* among the synonyms of L. brazzæ.

Mr. Pocock described in the Proc. Zool. Soc. Lond., 1908, p. 158, pl. X, fig. 2, a young animal without locality or history as *C. ezræ,* and which differs from L. brazzæ in not having the black on the hinder part of the head, and the outer side of the limbs, hands, and feet not yet jet black. The specimen is so young, and its pelage so affected by captivity (the hair on the loins having all been worn away by the rope or chain that held it, and the tail having lost all its hair, except a little at the root), that it makes a most unsatisfactory type for a distinct form, and it is to be regretted that such specimens should ever be selected to be the unique representative of a new species. At present it can only be surmised what the full grown animal would look like, but probably it might be recognizable from *L. brazzæ* by having the head from the red frontal band colored like the back. This is, however, only a surmise, and it is more probable that it will prove to be the young of L. BRAZZÆ, as I have supposed is really the fact.

Measurements. Total length, 697; tail, 367; foot, 90, (skin). Ex type Garden Zool. Soc. Lond.

LASIOPYGA DIANA (Linnæus).

Simia diana Linn., Syst. Nat., I, 1758, p. 26; I, 1766, p. 38; Schreb., Säugth., I, 1775, p. 94, pl. XIV; Gmel., Syst. Nat., I, 1788, p. 32.

Cercopithecus diana Erxl., Syst. Reg. Anim., 1777, p. 30; Wagn., Schreb., Säugth. Suppl., V, 1855, p. 48; Reichenb., Vollständ. Naturg. Affen, 1862, p. 107, figs. 263, 267; Forbes, Handb. Primates, II, 1894, p. 79; Jentink, Notes Leyd. Mus., 1898, p. 237; Pocock, Proc. Zool. Soc. Lond., 1907, pp. 682, 683, pl. XLI, fig. 1; Thos., Proc. Zool. Soc. Lond., 1911, p. 127.

Cercopithecus diana var. *ignita* Gray, Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 22.

Cercopithecus diana ignitus Sclater, Proc. Zool. Soc. Lond., 1893, p. 255; Johnst., Proc. Zool. Soc. Lond., 1905, p. 191.

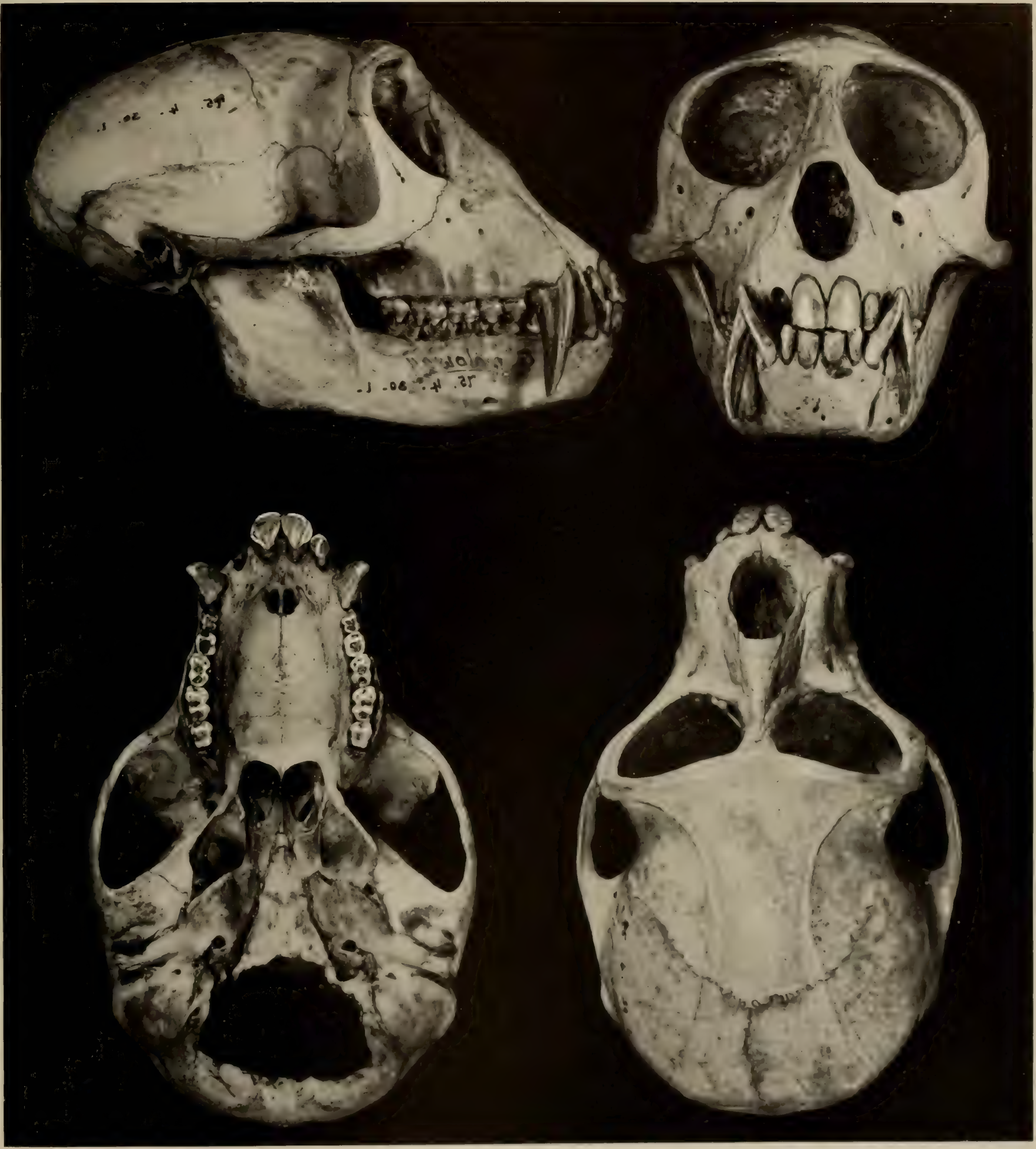
Type locality. Unknown.

Geogr. Distr. Liberia, very common, (Johnstone); West Africa.

Genl. Char. Beard short, front hairs black; ears tufted; inner side of thighs bright bay.

Color. Top of head, nape, neck, upper part of back and sides of body iron gray; a broad chestnut red band from middle of back to root of tail; a white or whitish crescentic band on forehead above eyes, edged in front with a line of stiff black hairs; face covered with black hairs; sides of head, reaching to angle of the mouth, and on sides of neck to shoulders, and extending to elbows on inner side of arms, beard, (except front hairs at base which are black), throat and upper part of chest, pure white; outer sides of arms to elbow, black, with very few white specks, forearm black, thickly speckled on outer side with white; rather broad white, or yellowish white band from knee across thigh to base of tail; outer side of legs black; upper edge of thigh from knee black, minutely speckled with white; inner side of thigh, and leg half way below knee, and anal region bright bay; hands and feet black; tail chestnut and black mixed at root, rest black to tip.

Measurements. Total length, 1,275; tail, 820; foot, 130. Skull: total length, 97.6; occipito-nasal length, 83; intertemporal width, 42.8; Hensel, 67.6; zygomatic width, 62.4; median length of nasals, 13.6;

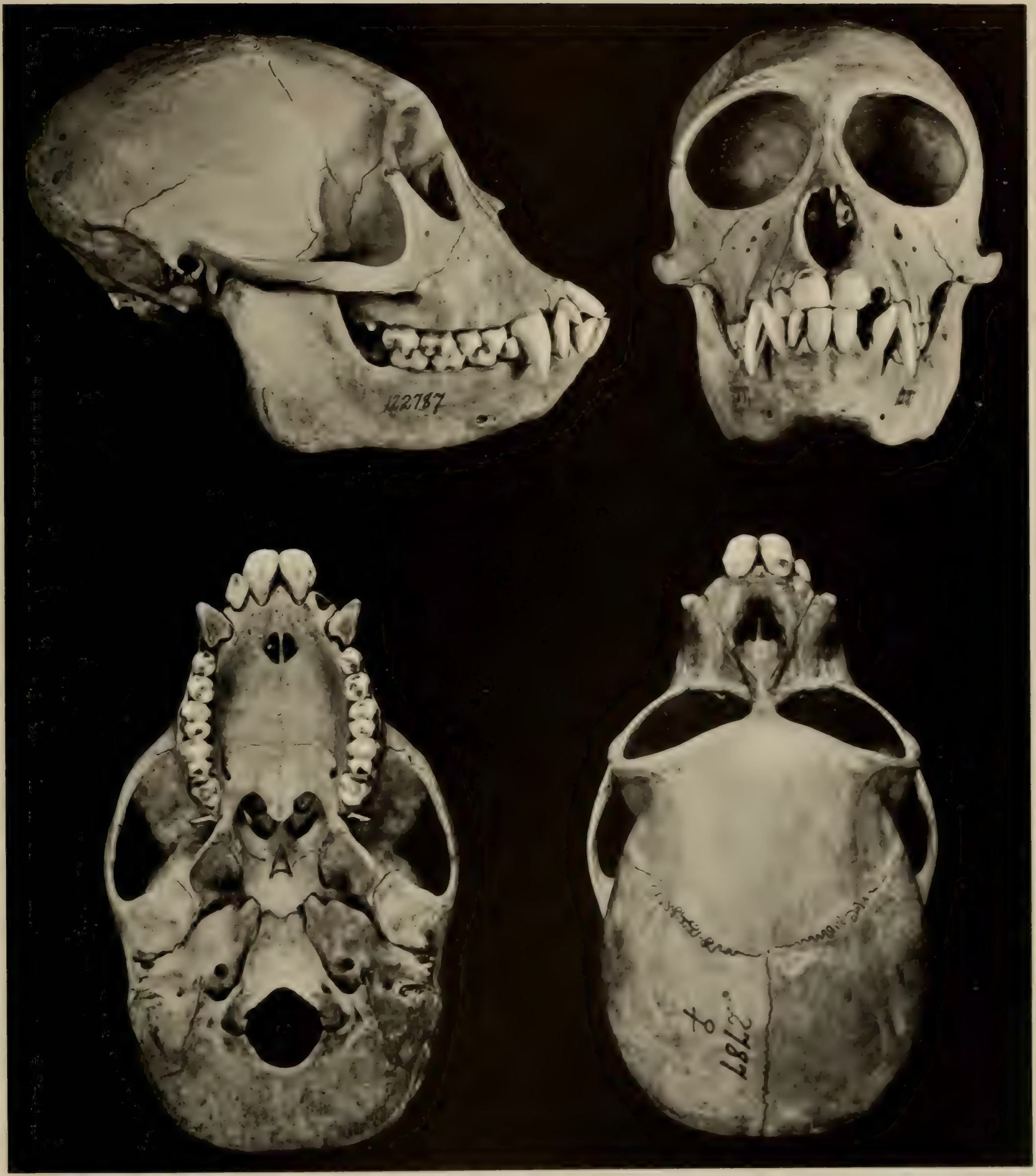


LASIOPYGA ROLOWAY.

SIDE VIEW REVERSED.

No. 75.4.30.1. Brit. Mus. Coll. ⅘ Nat. Size.

PLATE XXXIX.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LASIOPYGA DIANA (IMMATURE)

No. 122787 U. S. Nat. Mus. Coll. ⅘ Nat. Size.

palatal length, 35.6; length of upper canines, 14.8; length of mandible, 68; length of lower molar series, 29.6.

Since Linnæus described the present species, the name which he gave to it, DIANA, has been conferred upon the wrong animal by nearly all writers. Dr. Jentink, (l. c.) however, in his paper corrected the error that existed for so long a time, and proved that true DIANA was the monkey with a short beard, black at the base and white at the ends, that it had tufted ears, and the inner side of the thighs, and anal region bright bay; the one named L. ROLOWAY, heretofore called *diana* by many mammalogists, is the monkey with a long pure white beard, and the inner side of thighs white or pale orange, and the ears without tufts.

LASIOPYGA ROLOWAY (Erxleben).

Cercopithecus roloway Erxl., Syst. Regn. Anim., 1777, p. 42; Fisch., Syn. Mamm., 1829, p. 20; Reichenb., Vollständ. Naturg. Affen, 1862, p. 107; Jent., Notes Leyd. Mus., 1898, p. 237; Pocock, Proc. Zool. Soc. Lond., 1907, p. 683; *Id.* Proc. Zool. Soc. Lond., II, 1907, p. 683, fig. 179.

Simia roloway Bodd., Elench. Anim., 1784, p. 60.

La Roloway, ou La Palatine Buff., Hist. Nat., Suppl., XV, 1789, p. 77.

La Diane Audeb., Hist. Nat. Singes et Makis, 1797, Fam. IV, Sec. II, pl. VI, "cuisses, couleur orangée."

Simia diana (nec Linn.), Shaw, Genl. Zool., I, 1820, p. 38, fig.

Cercopithecus diana (nec Linn.), Desm., Mamm., 1820, p. 60; Kuhl, Beitr. Zool., 1820, p. 2; Gray, Proc. Zool. Soc. Lond., 1868, p. 182; *Id.* Cat. Monkeys, Lemurs and Fruit-eating Bats, Brit. Mus., 1870, p. 22; Schleg., Mus. Pays-Bas, Simiæ, 1876, p. 92; Sclat., Proc. Zool. Soc. Lond., 1893, p. 254; Forbes, Handb. Primates, II, 1894, p. 79, (Part.); Pousarg., Ann. Scien. Nat., I, 8me Sér., 1896, p. 266.

Cercopithecus palatinus Wagn., Schreb., Säugth. Suppl., V, 1855, p. 47; Sclat., Proc. Zool. Soc. Lond., 1893, p. 257; Matschie, Sitzungsb. Gesell. Naturf. Freunde, 1893, p. 215; Forbes, Handb. Primates, II, 1894, p. 81.

PALATINE GUENON.

Type locality. Guinea.

Geogr. Distr. Gold Coast, West Africa.

Genl. Char. Similar to L. DIANA, but with a long white beard, and inner side of thighs white or pale orange instead of bright bay.

Color. A narrow black line on forehead over eyes composed of long stiff hairs, succeeded by a narrow white line of stiff hairs, which like the black ones stand erect, and extend around the head to the temples. Sides of head, sides of nose, and top of head, jet black, speckled sparsely on crown with white; a broad reddish chestnut band covers dorsal region from shoulders to base of tail; rest of upper parts black, thickly speckled with white; outer side of arms, hands, feet, tail, lower part of breast, and abdomen jet black; inner side of forearms speckled with white; hairs on sides of head long, turning upward towards top of head, those beneath and behind ears long, directed backward, and all these together with inner side of arms, throat, beard, upper part of chest, and narrow line across thighs, white; lower parts of abdomen and inner side of thigh white, or pale orange; chin black; some hairs reaching the base of the beard, forming a narrow line.

Measurements. Total length, 1,267; tail, 755; foot, 135. Skull: total length, 112.8; occipito-nasal length, 92.5; Hensel, 77.9; zygomatic width, 73.1; intertemporal width, 46.2; width of braincase, 62.4; median length of nasals, 22.5; palatal length, 43.6; length of upper molar series, 26.7; length of mandible, 83.5; length of lower molar series, 34.1.

The following species is unknown to me, and no specimen resembling it is in the Leyden Museum:

Cercopithecus temmincki Ogilby, Libr. Entert. Knowl., Menag., 1838, p. 346; Sclat., Proc. Zool. Soc. Lond., 1893, p. 258.
Type locality. Guinea? Type not in Leyden Museum.

"Head, back and cheeks are ash colored, slightly mixed with brown on the hips and rump, the hairs being everywhere annulated with white, and thus partially speckled; the arms, forearms, thighs, legs and paws are black; the whole of the chin and throat, pure unmixed white; the cheeks, whiskers, and head grizzled ash, like the back and sides; the face apparently grayish blue and the belly ash colored. The tail is about the length of the body, but has lost the greater part of the hair; what remains, however, is of the same color as the body."

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